FIRE INCIDENCE & INHIBITION
A Report Bibliography

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FIRE INCIDENCE AND INHIBITION

A REPORT BIBLIOGRAPHY

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May 1965

AD-608 473 DIV. 8/1 14/1 26/1
(TIST6/00)
AERONCA MFG. CORP., MIDDLETON, OHIO.
INVESTIGATION OF FOAM PLASTIC TECHNIQUES FOR HARDENING GROUND RADOMES. (M)
FINAL REPT. FOR 1 JUL 63-31 MAY 64,
F
CAHILL,B. B. ;
OCT. 64 288 P. HC $6.00
AF30 602 3128 5579 557901 MF $1.50
RADC , TDR64 363
UNCLASSIFIED REPORT

DESCRIPTORS: (*RADOMES, EXPANDED PLASTICS), (*EXPANDED PLASTICS, RADOMES), SHELTERS, NUCLEAR EXPLOSION DAMAGE, POLYETHYLENE PLASTICS, LAMINATED PLASTICS, RADIATION DAMAGE, THERMAL RADIATION, DEGRADATION, HARDNESS, ABLATION, STRUCTURES, MATHEMATICAL ANALYSIS, ENCAPSULATION, STRUCTURAL SHELLS, ELECTRICAL PROPERTIES, POLYMERS, MECHANICAL PROPERTIES, STRESSES, LOADING (MECHANICS), EPOXY PLASTICS, STYRENE PLASTICS, BONDING, ANTENNA RADIATION PATTERNS, MODEL TESTS (U)

THE INVESTIGATION REPORTED HERE WAS DIRECTED TOWARD THE DETERMINATION OF THE FEASIBILITY OF HARDENING ABOVE GROUND ANTENNA INSTALLATIONS, AT THE 75 PSI FREE-FIELD OVERPRESSURE RANGE FOR A ONE MEGATON NUCLEAR BURST, BY MEANS OF PSUEDO-ENCAPSULATION WITH A FOAM PLASTIC RADOME. CONCLUSIONS FROM THE INVESTIGATION OF THE EFFECTS OF A NUCLEAR DETONATION ON THE SELECTED FOAM PLASTICS ARE SUMMARIZED AS FOLLOWS: (1) THE NUCLEAR RADIATION WILL HAVE A NEGLIGIBLE EFFECT ON THE DIELECTRIC AND MECHANICAL PROPERTIES, (2) THERMAL RADIATION PRODUCES CONSIDERABLE PHYSICAL CHANGES IN ALL FOAM PLASTIC MATERIALS THROUGH ABLATION, BURNING AND MELTING. THE ELECTRICAL PROPERTIES OF MOST FOAM PLASTICS ARE AFFECTED AS A RESULT OF CHARRED COMPOSITES ON THE RESIDUAL SURFACE. HOWEVER, POLYETHYLENE FOAM WAS OBSERVED IN THERMAL ABLATION TESTS TO LEAVE NO CHARRY RESIDUE. A THERMAL PROTECTION SYSTEM USING A POLYEHTYLENE FOAM LAMINATE WAS CONCLUDED FEASIBLE. (3) MECHANICAL SHOCK EFFECTS DUE TO THE BLAST OVERPRESSURE WAVE WERE INCONCLUSIVE DUE TO INADEQUATE TEST DATA ON THE STRESS-STRAIN RESPONSE OF FOAMS TO DYNAMIC LOADING. CONDITIONAL FEASIBILITY CAN BE ASSUMED ON THE BASIS OF ANTICIPATED FOAM PLASTIC NONLINEAR VISCOELASTIC RESPONSE. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-602 358 DIV. 22/1 20/1 25/1
(TIST2/00)
AEROSPACE INFORMATION DIV., WASHINGTON, D. C.
NUCLEAR WEAPONS EFFECTS: COMPILATION OF ABSTRACTS,
JAN 56-MAR 64. (U)
REPT. NO. 1,
1 HC $2.00
JULY 64 26 P. MF $0.50
AID ,TT P64 44; ,64 11877
UNCLASSIFIED REPORT
SURVEYS OF SOVIET-BLOC SCIENTIFIC AND TECHNIAL LITERATURE.

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, EXPLOSION EFFECTS), (*ABSTRACTS, NUCLEAR EXPLOSIONS), NUCLEAR EXPLOSION DAMAGE, SHOCK WAVES, PROPAGATION, GASES, SOLIDS, MATERIALS, METEORITES, MODELS (SIMULATIONS), HEAT TRANSFER, THERMAL RADIATION, USSR (U)

THIRTY-ONE ABSTRACTS OF SOVIET PAPERS (PUBLISHED BETWEEN JAN. 1956 AND MAR. 1964) ARE GIVEN UNDER THE FOLLOWING HEADINGS: STRUCTURE AND PARAMETERS OF STRONG SHOCK WAVES IN GASES; PARAMETERS OF STRONG SHOCK WAVES IN SOLIDS; PROPAGATION OF STRONG SHOCK WAVES; INTERACTION OF STRONG SHOCK WAVES WITH MATERIALS; NUCLEAR EXPLOSION EFFECTS; THE METEORITE ANALOGY; RADIATIVE HEAT TRANSFER. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-601 808 DIV. 14/1 12/1 17/1
(TISTI/50)
AEROSPACE CORP., LOS ANGELES, CALIF.
AIR PLASMA ARC MATERIALS TESTING FOR RE-ENTRY.
(U)
LEEDS,D. H. ;WELSH,W. E. ;SLAUGHTER,J.
I. ;KENDALL,E. G. ;
JUNE 64 57 P. HC $1.50
TDR269 4240 10 11 MF $0.75
AF04 695 269
SSD TDR64 75
UNCLASSIFIED REPORT

DESCRIPTORS: (*HEAT RESISTANT MATERIALS, TESTS), (*REFRACTORY MATERIALS, TESTS), (*RE-ENTRY VEHICLES, HEAT RESISTANT MATERIALS), (*TEST EQUIPMENT, ELECTRIC ARCS), PLASMA PHYSICS, SUBSONIC FLOW, AIR, HIGH TEMPERATURE RESEARCH, GRAPHITE, CARBIDES, OXIDES, HAFNIUM, TUNGSTEN, TITANIUM ALLOYS, ZIRCONIUM ALLOYS, TANTALUM ALLOYS, FEASIBILITY STUDIES (U)

MATERIALS RESEARCH IN A SUB-SONIC AIR PLASMA ARC, DELIVERING A COLD WALL HEAT FLUX OF 700 BTU/SQ FT -SEC FOR 60 SEC AND A COLD WALL HEAT FLUX OF 2400 BTU/SQ FT -SEC FOR 30 SEC IS DESCRIBED. ARC CAST HFC-C, ZRC-C, TIC-C, TAC-C, TIB2-B ALLOYS ARE COMPARED WITH COMMERCIALLY HOT PRESSED HFC-C, TI C-C, TAC-C ALLOYS, INFILTRATED TUNGSTEN AND SINTERED AND FORGED TUNGSTEN, PRESSED AND CAST THORIA AND INFILTRATED THORIA, PYROLYTIC AND BORON PYROLYTIC GRAPHITES, AND WITH STANDARDS OF COMPARISON SUCH AS ATJ GRAPHITE AND BORON NITRIDE. PAIRS OF MOTION PICTURES SHOW A CALIBRATED GRAY SCALE TO GIVE A BRIGHTNESS TEMPERATURE PROFILE, SIMULTANEOUSLY WITH A RECORD OF MATERIAL REACTIONS. MEASUREMENTS OF MASS ABLATION RATES AND LONGITUDINAL RECESSION RATES ARE COMPARED. HOT AND COLD FACE TEMPERATURES ON THE FLAT FACES OF SOLID CYLINDRICAL SPECIMENS ARE NOTED. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO. 010009

AD-601 573 DIV. 14/1
(TISTO/75)
AIR FORCE MATERIALS LAB., RESEARCH AND TECHNOLOGY
DIV., WRIGHT-PATTERSON AFB, OHIO.
THERMAL AND GAMMA RADIATION BEHAVIOR OF DYED NOMEX
YARNS.   (U)
REPT. FOR MAR-NOV 63.
MCGRATH, JOYCE C. ;
APR. 64   23 P. 7320 732001
ML TDR64 77

HC $0.75
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIBERS (SYNTHETIC), TEMPERATURE), (*GAMMA RAYS, FIBERS (SYNTHETIC)), *HEAT-RESISTANT MATERIALS, RADIATION DAMAGE, FIBERS (NATURAL), FLIGHT CLOTHING, COLORING, ULTRAVIOLET RADIATION, DECELERATION, CAMOUFLAGE, PHYSICAL PROPERTIES, DYES, MELTING, RADIATION EFFECTS, FIRE RESISTANT TEXTILES, DEGRADATION, PROTECTIVE CLOTHING, HIGH TEMPERATURE RESEARCH   (U)
IDENTIFIERS: NOMEX YARNS   (U)

A COMPARATIVE STUDY OF NATURAL AND DYED 100-DENIER YARNS OF NOMEX (A HIGH TEMPERATURE RESISTANT FIBER FORMERLY KNOWN AS HT-1) WAS MADE TO DETERMINE IF THE INCLUSION OF COLOR IN THE SOLUTION BEFORE FIBER FORMATION CHANGES OR AFFECTS THE STRENGTH OR TEMPERATURE RESISTANT PROPERTIES OF THE YARNS AFTER EXPOSURE TO TEMPERATURES UP TO 600F AND/OR GAMMA RADIATION. A VARIATION IN DATA WAS OBTAINED BETWEEN THE DYED YARNS AND THE NATURAL COLOR YARNS; HOWEVER THIS IS BELIEVED DUE TO A VARIATION IN THE YARNS AND NOT THE COLOR PROCESS. THE COLOR SEALED YARNS WERE FURNISHED IN VERY SMALL EXPERIMENTAL QUANTITIES WITH ZERO TWIST WHILE THE NATURAL YARNS WERE FURNISHED FROM A CONTRACT ITEM AND HAD PRODUCER'S TWIST. AT THE HIGHER TEMPERATURES, ALL THE YARNS HAD A TENDENCY TO BECOME SOMEWHAT BRITTLE AND FRAY OUT. ELONGATION PROPERTIES WERE MORE READILY AFFECTED BY HIGH TEMPERATURE AND/OR GAMMA RADIATION THAN THE STRENGTH PROPERTIES. ALL DATA OBTAINED FOR THE COLOR SEALED YARNS, AFTER EXPOSURE TO HIGH TEMPERATURE AND/OR GAMMA RADIATION, INDICATES THAT THE COLOR SEALING PROCESS HAS NOT ADVERSELY AFFECTED THE STRENGTH AND HIGH TEMPERATURE RESISTANT CHARACTERISTICS OF THE NOMEX YARNS. (AUTHOR)   (U)

AD-611 396 DIV. 14/1 4/1 31/1
(TISTI/00)
AMERICAN OIL CO WHITING IND
DEVELOPMENT OF NONFLAMMABLE HYDRAULIC FLUID.
(U)
BIMONTHLY PROGRESS REPT. NO. 5, 1 DEC
64-1 FEB 65,
5
BUNTING,K. R. ;DOBRY,A. M. ;SWAKON,E.
A. ;VIENNA,P. C. ;MIXON,L. W. ;
FEB. 65 10 P.
NOBS90267 SR001 03 01 606
UNCLASSIFIED REPORT
SEE ALSO AD-609 391.

HC $1.00
MF $0.50

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY-)), FLAMMABILITY, LUBRICANTS, SHIPS, PUMPS, COMPATIBILITY, SEA WATER, CORROSION INHIBITION, POLYMERS, TOXICITY, STORAGE, POLYETHYLENE PLASTICS, HANDLING, WEAR RESISTANCE, ADDITIVES, MATERIALS, CONSTRUCTION-
(U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE OBJECT OF THE STUDY IS THE DEVELOPMENT OF A WATERBASE HYDRAULIC FLUID WHICH (1) YIELDS A FIRE-RESISTANT NON-AQUEOUS RESIDUE, (2) IS COMPATIBLE WITH MATERIALS OF CONSTRUCTION AND SEA-WATER CONTAMINATION, (3) SATISFACTORILY LUBRICATES SHIPBOARD PUMPS, (4) PRESENTS NO UNUSUAL STORAGE OR HANDLING PROBLEMS, AND (5) EXHIBITS NO TOXICOLOGICAL HAZARDS UNDER CONDITIONS OF USE. LOWDENSITY POLYETHYLENE CAN BE CHLOROPHOSPHONATED BY REACTION WITH PHOSPHORUS TRICHLORIDE AND OXYGEN. HYDROLYSIS AND NEUTRALIZATION PRODUCES PRODUCTS WHICH SHOW CONSIDERABLE PROMISE AS THICKENERS. FLUIDS PREPARED FROM PRODUCTS FROM 21,000-MOLECULAR-WEIGHT POLYETHYLENE HAVE BEEN FOUND TO EXHIBIT UNDESIRABLE VISCOSITY INSTABILITY AND HIGH WEAR IN VICKERS VANE PUMPS. VISCOSITY INSTABILITY IS MUCH LESS PRONOUNCED WHEN 12,000-MOLECULAR-WEIGHT POLYMER IS USED TO PREPARE THE THICKENERS AND 18% OF POTASSIUM ETHANE PHOSPHONATE, ADDED AS A POUR DEPRESSOR, IS PRESENT. HIGH PUMP WEAR, HOWEVER, IS STILL A PROBLEM. WORK ON THE DEVELOPMENT OF AN ANTIWEAR ADDITIVE HAS BEGUN. FLAMMABILITY CHARACTERISTICS AND COMPATIBILITY WITH MATERIALS OF CONSTRUCTION AND 10% SEA WATER DO NOT APPEAR TO BE PROBLEMS WITH THESE FLUIDS. (AUTHOR)
(U)

AD-609 391 DIV. 14/1 4/1 31/1
(TIST1/00)
AMERICAN OIL CO WHITING IND
DEVELOPMENT OF NONFLAMMABLE HYDRAULIC FLUID.
(M)
BI-MONTHLY PROGRESS REPT. NO. 4, 1 OCT-
1 DEC 64,
4
BUNTING,K. R. ;DOBRY,A. M. ;SWAKON,E.
A. ;VIENNA,P. C.;MIXON,L. W. ;
DEC. 64 18 P.
NOBS90267 SR001 03 01 606
UNCLASSIFIED REPORT

HC $1.00
MF $0.50

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY)), FLAMMABILITY, LUBRICANTS, POLYMERS, POLYETHYLENE PLASTICS, VISCOSITY, TOXICITY, STORAGE, HANDLING, CORROSION INHIBITION, SUBMARINES, PUMPS, COMPATIBILITY, SEA WATER (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE OBJECT OF THE STUDY IS THE DEVELOPMENT OF A WATERBASE HYDRAULIC FLUID WHICH (1) YIELDS A FIRE-RESISTANT NON-AQUEOUS RESIDUE, (2) IS COMPATIBLE WITH MATERIALS OF CONSTRUCTION AND SEA-WATER CONTAMINATION, (3) SATISFACTORILY LUBRICATES SHIPBOARD PUMPS, (4) PRESENTS NO UNUSUAL STORAGE OR HANDLING PROBLEMS, AND (5) EXHIBITS NO TOXICOLOGICAL HAZARDS UNDER CONDITIONS OF USE. LOWDENSITY POLYETHYLENE CAN BE CHLOROPHOSPHONATED BY REACTION WITH PHOSPHORUS TRICHLORIDE AND OXYGEN. HYDROLYSIS AND NEUTRALIZATION PRODUCES PRODUCTS WHICH SHOW CONSIDERABLE PROMISE AS THICKENERS. THE PRODUCT FROM 21,000-MOLECULAR-WEIGHT POLYETHYLENE, NEUTRALIZED TO A PH OF 8.0 WITH SODIUM HYDROXIDE, PRODUCES A FLUID WHICH (1) HAS THE DESIRED VISCOSITY, (2) IS SHEAR STABLE IN TESTS USING A RAYTHEON SONIC OSCILLATOR, (3) CAN BE RENDERED NON-CORROSIVE TO IRON, COPPER, ALUMINUM, ZINC, AND SILVER BRAISE BY THE ADDITION OF 1.0% OF SODIUM CHROMATE OR SODIUM DICHROMATE, (4) HAS NO DELETERIOUS EFFECT ON BUNA N RUBBER, (5) IS COMPATIBLE WITH 10% SYNTHETIC SEA WATER, (6) IS NON-TOXIC AND NON-IRRITATING, AND (7) APPEARS TO PRODUCE NON-AQUEOUS RESIDUES HAVING SATISFACTORY FLAMMABILITY CHARACTERISTICS. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-608 630 DIV. 14/1 31/1
(TISTI/00)
AMERICAN OIL CO., WHITING, IND.
DEVELOPMENT OF NONFLAMMABLE HYDRAULIC FLUID.
(M)
BIMONTHLY PROGRESS REPT. NO. 3, 1 AUG-
1 OCT 64,
3
BUNTING,K. R. ;DOBRY,A. M. ;SWAKON,E.
A. ;VIENNA,P. C.;MIXON,L. W. ;
OCT. 64 8 P.
NOBS90267 SR001 03 01 606
UNCLASSIFIED REPORT
SEE ALSO AD-608 631.

HC $1.00
MF $0.50

DESCRIPTORS: (*HYDRAULIC FLUIDS, FLAMMABILITY), (*FLAMMABILITY, HYDRAULIC FLUIDS), SYNTHESIS (CHEMISTRY), COMPATIBILITY, POLYETHYLENE PLASTICS, PHOSPHORYLATION, CHLORINATION, LUBRICANTS, PUMPS, SHIPBORNE, CORROSION INHIBITION, IRON, COPPER, SILVER, ALUMINUM, ZINC, RUBBER, HANDLING, STORAGE, TOXICITY, VISCOSITY, SOLUBILITY, SEA WATER (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE OBJECT OF THE STUDY IS THE DEVELOPMENT OF A WATERBASE HYDRAULIC FLUID WHICH (1) YIELDS A FIRE-RESISTANT NONAQUEOUS RESIDUE, (2) IS COMPATIBLE WITH MATERIALS OF CONSTRUCTION AND SEA-WATER CONTAMINATION, (3) SATISFACTORILY LUBRICATES SHIPBOARD PUMPS, (4) PRESENTS NO UNUSUAL STORAGE OR HANDLING PROBLEMS, AND (5) EXHIBITS NO TOXICOLOGICAL HAZARDS UNDER CONDITIONS OF USE. LOW-DENSITY POLYETHYLENE CAN BE CHLOROPHOSPHONATED BY REACTION WITH PHOSPHORUS TRICHLORIDE AND OXYGEN. HYDROLYSIS AND NEUTRALIZATION PRODUCES PRODUCTS WHICH SHOW CONSIDERABLE PROMISE AS THICKENERS. THE PRODUCT FROM 21,000-MOLECULAR-WEIGHT POLYETHYLENE, NEUTRALIZED TO A PH OF 8.0 WITH SODIUM HYDROXIDE, PRODUCES A FLUID WHICH (1) HAS THE DESIRED VISCOSITY, (2) IS SHEAR STABLE IN TESTS USING A RAYTHEON SONIC OSCILLATOR, (3) CAN BE RENDERED NON-CORROSIVE TO IRON, COPPER, SILVER BRAISE, ALUMINUM, AND ZINC BY THE ADDITION OF CORROSIVE INHIBITORS, (4) HAS NO DELETERIOUS EFFECT ON BUNA N RUBBER, (5) IS COMPATIBLE WITH 10% SYNTHETIC SEA WATER, (6) IS NON-TOXIC AND NON-IRRITATING, AND (7) APPEARS TO PRODUCE A NON-AQUEOUS RESIDUE HAVING SATISFACTORY FLAMMABILITY CHARACTERISTICS. (AUTHOR) (U)

AD-608 631 DIV. 14/1 31/1
(TISTI/OO)
AMERICAN OIL CO., WHITING, IND.
DEVELOPMENT OF NONFLAMMABLE HYDRAULIC FLUID.
(M)
BIMONTHLY PROGRESS REPT. NO. 2, 1 JUN-
1 AUG 64,
2
BUNTING,K. R. ;DOBRY,A. M. ;SWAKON,E.
A. ;VIENNA,P. C.;MIXON,L. W. ;
AUG. 64 9 P.
NOBS90267 SR001 03 01 606
UNCLASSIFIED REPORT
SEE ALSO AD-600 901.

HC $1.00
MF $0.50

DESCRIPTORS: (*HYDRAULIC FLUIDS, FLAMMABILITY), (*FLAMMABILITY, HYDRAULIC FLUIDS), SYNTHESIS (CHEMISTRY), SOLUBILITY, POLYETHYLENE PLASTICS, PHOSPHORYLATION, CHLORINATION, AMINES, VISCOSITY, ORGANIC PHOSPHORUS COMPOUNDS, STORAGE, HANDLING, HAZARDS, TOXICITY, SEA WATER, COMPATIBILITY, LUBRICANTS, PUMPS, SHIPBORNE, HYDROLYSIS (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE OBJECT OF THE STUDY IS THE DEVELOPMENT OF A WATERBASE HYDRAULIC FLUID WHICH (1) YIELDS A FIRE-RESISTENT NON-AQUEOUS RESIDUE, (2) IS COMPATIBLE WITH MATERIALS OF CONSTRUCTION AND SEA-WATER CONTAMINATION, (3) SATISFACTORILY LUBRICATES SHIPBOARD PUMPS, (4) PRESENTS NO UNUSUAL STORAGE OR HANDLING PROBLEMS, AND (5) EXHIBITS NO TOXICOLOGICAL HAZARDS UNDER CONDITIONS OF USE. ATTEMPTS TO PREPARE POLYMERS OF UNSATURATED ORGANIC ACIDS OF PHOSPHORUS HAVING MOLECULAR WEIGHTS SUFFICIENTLY HIGH TO THICKEN WATER WERE NOT SUCCESSFUL. LOW-DENSITY POLYETHYLENE CAN BE CHLOROPHOSPHORATED BY REACTION WITH PHOSPHORUS TRICHLORIDE AND OXYGEN. HYDROLYSIS AND NEUTRALIZATION RESULTS IN PRODUCTS WHICH CONTAIN ABOUT 15% PHOSPHORUS AND BASED ON PRELIMINARY DATA, SHOW CONSIDERABLE PROMISE AS THICKENERS. (AUTHOR)
(U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-611 258 DIV. 13/1 22/1
(TIST3/00)
AMMANN AND WHITNEY NEW YORK
RESPONSE OF PROTECTIVE VAULTS TO BLAST LOADING.
(U)

COHEN,E. ;LAING,E. ;BOTTENHOFER,A. ; HC $3.00
MF $0.75
APR. 61 87 P. 30 4
WT , 1451

UNCLASSIFIED REPORT

REPT. ON OPERATION PLUMBBOB, NEVADA TEST SITE, MAY-OCT 57.
AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION.
REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC.
A COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*STRUCTURES, EXPLOSION EFFECTS), (*NUCLEAR EXPLOSION DAMAGE, STRUCTURES), NUCLEAR EXPLOSIONS, SHOCK RESISTANCE, PRESSURE, BLAST, TENSILE PROPERTIES, REINFORCING MATERIALS, SOIL MECHANICS, STEEL, METAL PLATES, CONSTRUCTION, DESIGN, THRUST, ELASTICITY (U)
IDENTIFIERS: PLUMBOB OPERATION (U)

A REINFORCED-CONCRETE STEEL-PLATE-LINED VAULT AND STEEL VAULT DOOR WERE EXPOSED TO A NUCLEAR DETONATION (SHOT PRISCILLA, ABOUT 37 KT, BALLOON SUSPENDED, AT 700 FT) AT THE PREDICTED 75-PSI PEAK INCIDENT PRESSURE LEVEL (1150 FT FROM GROUND ZERO). THE VAULT WAS DESIGNED BY THE ULTIMATESTRENGTH THEORY TO UTILIZE THE ADDITIONAL STRAIN ENERGY AVAILABLE IN THE ELASTOPLASTIC AND PLASTIC RANGES. FLEXURAL AND THRUST CAPACITIES WERE DETERMINED, AND SHEAR CAPACITY WAS COMPUTED. IT WAS ESTABLISHED THAT ABOVE-GROUND STRUCTURES CAN BE DESIGNED AND CONSTRUCTED TO SURVIVE THE PRESSURE LEVELS EXPERIENCED BY THIS STRUCTURE. THE VAULT AND DOOR PROVIDED ADEQUATE BLAST AND THERMAL PROTECTION FOR NORMAL USAGE, AND THE STRUCTURE WAS ADEQUATE TO RESIST OVERTURNING AND EXCESSIVE SLIDING UNDER CONDITIONS OF THE TEST. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-603 233 DIV. 1/1 7/1 10/1
(TIST6/00)
ATLANTIC RESEARCH CORP., ALEXANDRIA, VA.
LIGHTNING PROTECTION MEASURES FOR AIRCRAFT FUEL
SYSTEMS. PHASE 2, (U)

BOLTA,CHRISTIAN C. ;FRIEDMAN,RAYMOND
;GRINER,GARY M.;MARKELS,MICHAEL ,JR.;T-
OBRINER,MATTHEW W. ;
MAY 64 260 P.
FA64WA4955 321 020 02H
FAA , ADS18

HC $6.00
MF $1.25

UNCLASSIFIED REPORT

DESCRIPTORS: (*FUEL SYSTEMS, AVIATION SAFETY), (*LIGHTNING ARRESTERS, AIRCRAFT), (*AVIATION SAFETY, LIGHTNING), FLAME PROPAGATION, TANK VENTS, IGNITION, COMBUSTION, EXPLOSIONS, FLAME ARRESTERS, VOLTAGE, ELECTRIC CURRENTS, FUEL TANKS, FIRE EXTINGUISHERS, SPARK IGNITION, JET TRANSPORT PLANES, DE-ICING SYSTEMS, EQUATIONS, JET ENGINE FUELS (U)
IDENTIFIERS: C-135 AIRCRAFT (U)

RESEARCH WAS CONDUCTED TO DEVELOP TECHNOLOGY LEADING TO METHODS OF OVERCOMING AIRCRAFT LIGHTNING STRIKE HAZARDS AND TO INVESTIGATE THE POTENTIAL HAZARDS INTRODUCED BY THESE METHODS. THE PROGRAM INCLUDED EXPERIMENTAL AND ANALYTICAL INVESTIGATIONS OF (A) FLAME PROGRAM INCLUDED PROPAGATION CHARACTERISTICS THROUGH THE 707 VENT SYSTEM, (B) THE EFFECTIVENESS OF FLAME ARRESTERS OF VARIOUS DESIGNS LOCATED AT DIFFERENT SECTIONS OF THE VENT SYSTEM, (C) EXPLOSION SUPPRESSION TECHNIQUES UTILIZING AN EXPLOSIVELY DISSEMINATED CHEMICAL AGENT TO PREVENT EXPLOSION IN AIRCRAFT TANKS UPON SENSING A FLAME PROPAGATING THROUGH THE VENT TUBE, AND (D) THE PREVIOUSLY REPORTED ULTRA-HIGH BLAST PRESSURE EFFECTS AND LARGE VOLUME PLASMA GENERATION. ANALYTICAL EVALUATIONS WERE PERFORMED CONCERNING THE ADDITION OF AIR TO THE COMBUSTIBLE VAPOR MIXTURE TO OBTAIN HIGH-VELOCITY EFFLUENT FROM THE VENT OUTLET TO PREVENT FLASHBACK, THE USE OF MECHANICAL VALVES TO ISOLATE VENT PASSAGES, AND THE USE OF BLADDERS AS FUEL CONTAINERS. A PURELY THEORETICAL ANALYSIS WAS PERFORMED TO EVALUATE THE POTENTIAL HAZARDS DUE TO ICING OF SELECTED FLAME ARRESTER DESIGNS. (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-603 488 DIV. 14/1 1/1 12/1 29/1
(TIST1/00)
AVIATION MEDICAL ACCELERATION LAB., NAVAL AIR DEVELOPMENT CENTER, JOHNSVILLE, PA.
EFFECT OF OXYGEN ENRICHED ATMOSPHERE ON THE BURNING RATE OF FABRICS: PHASE II, (U)

CHIANTA,MARIA A. ;STOLL,ALICE M. ;
JUNE 64 18 P.
NADC ML , 6408

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*OXYGEN, SPACE CAPSULES), (*SPACE FLIGHT, FIRE-RESISTANT TEXTILES), (*FIRE-RESISTANT TEXTILES, FLIGHT CLOTHING), (*FLIGHT CLOTHING, FIRE-RESISTANT TEXTILES), BURNING RATE, POLYAMIDE PLASTICS, NITROGEN, ARGON, FIRE SAFETY, COTTON TEXTILES, SPACE ENVIRONMENTAL CONDITIONS, FIBERS (SYNTHETIC), HAZARDS, TEMPERATURE, PRESSURE, COMBUSTION, IGNITION, TEXTILES (U)
IDENTIFIERS: NOMEX YARNS (U)

THIS STUDY, DESIGNED TO ASCERTAIN THE FEASIBILITY OF OXYGEN ENRICHMENT OF CAPSULAR ENVIRONMENTS WITHOUT INCREASING CLOTHING FIRE HAZARD, HAS: 1) REVEALED THAT UNDER THE CONDITIONS OF THESE EXPERIMENTS, WITH THE BEST FIRERESISTANT CLOTHING MATERIAL AVAILABLE, ONLY A 10% INCREASE IN OXYGEN CONCENTRATION MAY BE REALIZED IN AN OXYGEN-NITROGEN ATMOSPHERE IRRESPECTIVE OF PRESSURE; SIMILARLY, A 20% INCREASE, OF ARGON IS USED; 2) DEMONSTRATED THE EXISTENCE AND PROGRESSION OF THE DAMPING EFFECT OF INERT GASES; AND 3) SUGGESTED A MEANS OF EXTENDING OBSERVATIONS MADE IN ONE GASEOUS ENVIRONMENT TO ANY OTHER OF KNOWN PHYSICAL PROPERTIES. IT IS CONCLUDED THAT SIGNIFICANT OXYGEN ENRICHMENT MAY BE ACHIEVED SAFELY ONLY BY INTRODUCTION OF A PHYSIOLOGICALLY SAFE GAS OR GAS MIXTURES AT LEAST TWICE AS DENSE AS NITROGEN. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-607 249 DIV. 1/1 32/1
(TIST6/00)
AVIATION SAFETY ENGINEERING AND RESEARCH, PHOENIX,
ARIZ,
SYNTHESIS OF AIRCRAFT (CRASH) FIRE, RESCUE, AND
EVACUATION TECHNOLOGY, (U)
TECHNICAL REPT,,
HENNEBERGER,H, G, C, ;ROEGNER,H, F,
;CAMBEIS,L,;
JULY 64 256 P,
FA WA4458
FAA , ADS16

HC $6.00
MF $1.25

UNCLASSIFIED REPORT

REPT, ON PROJ, SAFRET,

DESCRIPTORS: (*AIRCRAFT FIRES, BIBLIOGRAPHY), (*AVIATION SAFETY, BIBLIOGRAPHY), RESCUES, HAZARDS, FIRE SAFETY, AVIATION FUELS, FIRE-RESISTANT TEXTILES, AVIATION ACCIDENTS, FIRE EXTINGUISHERS, HUMAN ENGINEERING, REPORTS, DOCUMENTATION, ABSTRACTING, SUBJECT INDEXING, CLASSIFICATION, INFORMATION RETRIEVAL (U)
IDENTIFIERS: CRASH FIRES, EVACUATION (SAFETY) (U)

CONTAINED IN THE REPORT ARE ALL OF THE BASIC ELEMENTS THE USER NEEDS TO RAPIDLY IDENTIFY DOCUMENTS CONTAINING SPECIFIC INFORMATION ON THE SUBJECT OF POSTCRASH AIRCRAFT FIRE, RESCUE AND EVACUATION, AFTER PERTINENT DOCUMENTS HAVE BEEN IDENTIFIED THE USER IS ABLE TO READ AN ABSTRACT OF EACH, THE INFORMATION RETRIEVAL SYSTEM IS SIMPLY DESCRIBED FROM THE USER'S POINT OF VIEW, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-606 135 DIV. 14/1 12/1
(TIST3/00)
BENDIX PRODUCTS DIV., BENDIX CORP., SOUTH BEND,
IND.
THERMAL PROTECTIVE SURFACES FOR STRUCTURAL PLASTICS-
. (U)
QUARTERLY PROGRESS REPT. NO. 3, 1 FEB-
30 APR 60,
3
VOGAN,JAMES W. ;
MAY 60 9 P.
AF33 616 6393 7340 73402

HC $3.00
MF $0.75

UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION WILL BE MADE FROM BEST AVAILABLE COPY.
SEE ALSO: AD-260 209.

DESCRIPTORS: (*PLASTICS, THERMAL INSULATION), (*CERAMIC COATINGS, PLASTICS), (*THERMAL INSULATION, COMPOSITE MATERIALS), (*COMPOSITE MATERIALS, THERMAL INSULATION), (*ZIRCONIUM COMPOUNDS, OXIDES), EROSION, HEAT TREATMENT, PHENOLIC PLASTICS, HONEYCOMB CORES, GLASS, NICKEL, REINFORCING MATERIALS, HEAT-RESISTANT MATERIALS, THERMAL PROPERTIES, CERAMIC MATERIALS, PROTECTIVE TREATMENTS, METAL COATINGS, GRAPHITE, SOLID FUEL ROCKETS, REFRACTORY COATINGS (U)
IDENTIFIERS: ZIRCONIA (U)

AN INVESTIGATION WAS CARRIED OUT ON THE EFFECT OF PROCESSING VARIABLES FOR THE ZIRCONIA BASED INSULATING AND EROSION RESISTANT LAYERS. THE REQUIRED COMPACTING PRESSURES AND HEAT TREATMENT FOR THESE MATERIALS WAS ESTABLISHED. IN ADDITION, VARIOUS METHODS WERE TRIED FOR FABRICATING THE MORE COMPLEX STRUCTURES. IT WAS CONCLUDED THAT THE BEST SYSTEM CURRENTLY AVAILABLE IS A GLASS FILLED PHENOLIC PLASTIC PROTECTED WITH AN INCONEL HONEYCOMB REINFORCED ZIRCONIA INSULATOR FACED WITH A PLASMA SPRAYED ZIRCONIA SURFACE. THIS STRUCTURE WAS FABRICATED INTO A SMALL EXPANSION CONE IN A CONFIGURATION SUITABLE FOR TESTING ON A SOLID FUEL ROCKET. (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-603 130 DIV. 10/1 13/1
(TIST1/00)
BUREAU OF MINES, PITTSBURGH, PA,
FIRE AND EXPLOSION HAZARDS OF FLIGHT VEHICLE COMBUSTIBLES, (U)
QUARTERLY PROGRESS REPT, NO, 2, 1 APR-30 JUN 64,
2
LITCHFIELD,E. L, ;PERLEE,H, E, ;
JUNE 64 10 P,
AF33 615 64 1007 6075 607504
UNCLASSIFIED REPORT

HC $1.00
MF $0.50

DESCRIPTORS: (*PROPELLANTS, EXPLOSIONS), (*FIRE EXTINGUISHERS, HALOGENATED HYDROCARBONS), (*HALOGENATED HYDROCARBONS, FIRE EXTINGUISHERS), LIQUEFIED GASES, SOLIDIFIED GASES, HYDROGEN, OXYGEN, NITROGEN, CHLORIDES, KEROSENE, BUTANE, ALIPHATIC COMPOUNDS, ICE, ADDITIVES, AUTOIGNITION, OXIDATION, FLUORIDES, BROMIDES (U)

THE INITIATING SHOCK STRENGTH FOR CRYOGENIC MIXTURES OF LIQUID HYDROGEN AND SOLID OXYGEN AND OF MIXTURES OF LIQUID OXYGEN AND HYDROCARBONS IS 1,2 TO 2,5 KBAR, INERT DILUENTS PRODUCE DESENSITIZATION OF THE LIQUID HYDROGEN-OXYGEN SYSTEM, EQUAL MOLAR DILUTION OF THE OXYGEN WITH EITHER NITROGEN OR METHYL CHLORIDE INCREASED THE INITIATING SHOCK STRENGTH BY ABOUT A FACTOR OF TWO. KEROSINE, BUTANE, AND PROPANE ALL HAVE NEARLY THE SAME SENSITIVITY WHEN COMBINED WITH LOX. METHYL CHLORIDE IS A RELATIVELY-INSENSITIVE INDIVIDUAL FUEL; BUT AS AN ADDITIVE TO A LOXHYDROCARBON MIXTURE, IT SHOWED NO DESENSITIZATION EFFECT. POWDERS ARE MUCH LESS EFFECTIVE DETONATION SUPPRESSANTS IN THE GASEOUS 60-40 HYDROGEN-OXYGEN SYSTEM THAN ARE SOME OF THE PREVIOUSLY TESTED GASEOUS INHIBITORS, THE SUPPRESSION EFFECTS OF THE POWDERS APPEAR TO BE ENTIRELY THERMAL IN NATURE, 1-BROMO-2,4-DICHLORO-1,1,2,3,3,4-HEXAFLUOROBUTANE HAS THE LOWEST, OR NEARLY THE LOWEST, MINIMUM AUTOIGNITION TEMPERATURES OS THE FOUR HALOGENATED HYDROCARBONS TESTED.

(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-607 288 DIV, 10/1 13/1 22/1
(TIST2/00)
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION,
BERKELEY,
IGNITION OF BLACK ALPHA-CELLULOSE PAPERS BY THERMAL
RADIATION, SQUARE WAVE PULSE, (U)
INTERIM TECHNICAL REPT.,
SAUER,F, M, ;
SEPT, 56
AFSWP , 869

HC $2.00
MF $0.50

UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY,

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY,

DESCRIPTORS: (*PAPER, IGNITION), (*NUCLEAR EXPLOSION DAMAGE, FIRES), (*FIRES, IGNITION), CELLULOSE, THICKNESS, DENSITY, THERMAL PROPERTIES, COMBUSTION, FLAMES, PYROLYSIS, MOISTURE, THERMAL RADIATION (U)

AVAILABLE DATA ON CRITICAL ENERGIES FOR SUSTAINED IGNITION OF BLACK ALPHA-CELLULOSE PAPER IN THE ABSENCE OF FORCED CONVECTIVE HEAT LOSSES ARE CORRELATED AGAINST EXPOSURE TIME ON A NONDIMENSIONAL BASIS. INVESTIGATIONS COVER A RANGE OF IRRADIANCE FROM 2 TO 25 CAL/SQ CM SEC, EXPOSURE TIME FROM 0,1 TO 4 SECONDS, AND PAPER THICKNESS FROM 2 TO 30 MILS, IGNITION ENERGIES FOR PAPERS OF TWO NOMINAL DENSITIES WERE DETERMINED, RESULTS ARE PRESENTED IN TERMS OF AN ENERGY MODULUS AND THE FOURIER MODULUS FOR A CONSTANT VALUE OF E/RT SUB 0 EQUAL TO 44, FOR FOURIER MODULI LESS THAN 0,4, THE ENERGY MODULUS APPROACHES A CONSTANT VALUE OF APPROXIMATELY 0,11, AS THE FOURIER MODULUS INCREASES, THE ENERGY MODULUS DECREASES TO A MINIMUM VALUE OF 0,068 AT A FOURIER MODULUS OF 0,8, FOR FOURIER MODULI ABOVE 0,8, THE ENERGY MODULUS INCREASES WITH EXPOSURE TIME ACCORDING TO A GIVEN EQUATION, REGIONS OF IGNITION, TRANSIET FLAMING, DESTRUCTION (WITHOUT FLAME), AND NONDESTRUCTION ARE ILLUSTRATED IN TERMS OF THE ABOVEMENTIONED DIMENSIONLESS MODULI, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-602 204 DIV. 16/1 29/1
(TISTI/10)
CIVIL AEROMEDICAL RESEARCH INST., OKLAHOMA CITY,
OKLA.
THE FLAMMABILITY OF LIP, FACE AND HAIR PREPARATIONS
IN THE PRESENCE OF 100% OXYGEN, (U)
DILLE,J. ROBERT ;CRANE,CHARLES R. ;PENDERGRASS,GEORGE E.;
NOV. 63 8 P.
CARI 63 27

HC $1.10
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*AVIATION SAFETY, TOILET ARTICLES), (*TOILET ARTICLES, FLAMMABILITY), (*OXYGEN, AVIATION SAFETY), AVIATION MEDICINE, FIRES, BURNS, FACE, HAIR, EXPLOSIONS, PRESSURE, WOUNDS AND INJURIES, HIGH PRESSURE RESEARCH, SPARKS, HYDROCARBONS, HAZARDS (U)

THE EFFECTS OF HIGH CONCENTRATIONS AND PRESSURES OF OXYGEN AND OF STATIC SPARKS UPON LIP, FACE AND HAIR PREPARATIONS WERE DETERMINED BECAUSE OF QUESTIONS THAT FREQUENTLY ARISE AND APPREHENSION THAT EXISTS. A WIDE MARGIN OF SAFETY WAS FOUND FOR THEIR USE AT OR BELOW ONE ATMOSPHERE OF PRESSURE. HOWEVER, THEIR USE IN EXPERIMENTAL OR THERAPEUTIC COMPRESSIONS IS NOT DEEMED SAFE DUE TO A MARKED INCREASE IN THE EFFECTS OF A STATIC SPARK UPON THESE COMPOUNDS AT TWO ATMOSPHERES OXYGEN PRESSURE. (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-602 461 DIV, 10/1 32/1
(TIST6/00)
COMMITTEE ON FIRE RESEARCH, NAS-NRC, WASHINGTON,
D, C,
DIRECTORY OF FIRE RESEARCH IN THE UNITED STATES,
(U)

HC $6.00
MF $1.25

BERL,WALTER G. ;
0 221 P,
NAS-NRC , 1189
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, SCIENTIFIC RESEARCH), (*FIRE SAFETY, SCIENTIFIC RESEARCH), (*ABSTRACTS, FIRES), PROPELLANTS, FUELS, DIRECTORIES, METEOROLOGY, FIRE EXTINGUISHERS, DOCUMENTATION, FLAMMABILITY, EXPLOSIVE MATERIALS, FOREST FIRES, ELECTRICAL EQUIPMENT, AUTO-IGNITION, COMBUSTION, CONTROL, PETROLEUM, POWDERS, BIBLIOGRAPHIES, EXPLOSIONS, FLUIDS, GREASES, ATOMIZATION (U)

(U)

AD-610 867 DIV, 14/1 17/1
(TIST5/00)
DAYTON UNIV OHIO RESEARCH INST
THE EVALUATION OF HIGH TEMPERATURE MATERIALS, SECTION I: EVALUATION OF COATINGS FOR REFRACTORY ALLOYS, SECTION II: MATERIALS EVALUATION WITH AN ARC-PLASMA-JET, (U)
REPT, FOR JUN 63-APR 64,
WURST,J, C, ;CHERRY,J, A, ;
SEPT, 64 170 P,
HC $5.00
MF $1.00
AF33 616 7838 7381 738103
ML , TDR64 62 V2
UNCLASSIFIED REPORT
SEE ALSO AD-601 638.

DESCRIPTORS: (*REFRACTORY METAL ALLOYS, COATINGS), (*HEAT-RESISTANT MATERIALS, PERFORMANCE (ENGINEERING)), (*COATINGS, OXIDATION INHIBITION), (*NIOBIUM ALLOYS, COATINGS), (*MOLYBDENUM ALLOYS, COATINGS), (*PLASMA JETS, TEST FACILITIES), COMPOSITE MATERIALS, EFFECTIVENESS, METALLOGRAPHY, CERAMIC MATERIALS, POROUS MATERIALS, ABLATION, IMPREGNATION, CREEP, RUPTURE, TENSILE PROPERTIES, DEFORMATION, DISKS, STATISTICAL ANALYSIS, TESTS (U)
IDENTIFIERS: EVALUATION, NIOBIUM ALLOY B-66, MOLYBDENUM ALLOY TZM (U)

SECTION I DESCRIBES THE EVALUATION OF OXIDATION-RESISTANT COATINGS FOR TZM MOLYBDENUM (MO-0,5TI-0,07ZR-0,03C) AND B66 COLUMBIUM (CB-5V-5MO-1ZR), EIGHT COATINGS FOR TZM WERE EVALUATED WITH PRIMARY EMPHASIS UPON FOUR OF THESE, SIX COATINGS FOR B66 WERE EVALUATED WITH THE BULK OF THIS EFFORT CONCENTRATED UPON TWO COATING SYSTEMS, TEST RESULTS COVERING COMPLETE METALLOGRAPHIC ANALYSIS, TENSILE AND BEND TESTS, CYCLIC OXIDATION TESTS IN THE TEMPERATURE RANGE OF 1600 TO 3000F, AND THE RESULTS OF CREEP-RUPTURE TESTS COMPLETE WITH A STATISTICAL ANALYSIS ARE PRESENTED, SECTION II DESCRIBES THE SCREENING TESTS OF 32 DIFFERENT HIGH-TEMPERATURE MATERIALS, INCLUDING ABLATIVE MATERIALS, IMPREGNATED POROUS CERAMICS, AND REFRACTORY COMPOSITES, IN AN ARC-PLASMA TESTING FACILITY, INCLUDED ARE SCREENING DATA FOR SEVERAL REFRACTORY MATERIALS DEVELOPED FROM TESTS OF 1-INCH DIAMETER DISCS.

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-601 638 DIV, 14/1 17/1
(TIST3/50)
DAYTON UNIV,, OHIO, RESEARCH INST,
THE EVALUATION OF HIGH TEMPERATURE MATERIALS, PART I: EVALUATION OF COATINGS FOR REFRACTORY ALLOYS, PART II: MATERIALS EVALUATION WITH AN ARC-PLASMA-JET, (U)
INTERIM SUMMARY REPT,, JAN 62-JUN 63,

WURST,JOHN C, ;
MAR, 64 227 P,
AF33 616 7838 7381 ,TASK
ML TDR64 62

HC $3.50
MF $1.25

UNCLASSIFIED REPORT

DESCRIPTORS: (*REFRACTORY METAL ALLOYS, COATINGS), (*COATINGS, REFRACTORY METALS AND ALLOYS), (*HEAT RESISTANT MATERIALS, PERFORMANCE (ENGINEERING)), MECHANICAL PROPERTIES, PLASMA JETS, REFRACTORY MATERIALS, REFRACTORY COATINGS, ABLATION, COMPOSITE MATERIALS, TEST METHODS, EXPERIMENTAL DATA, IMPREGNATION, MATERIALS, POROUS MATERIALS, CERAMIC MATERIALS, SPRAYS, CERAMIC COATINGS, OXIDATION, LAMINATED PLASTICS (U)

THIS REPORT DESCRIBES THE EVALUATION OF CANDIDATE MATERIALS SYSTEMS FOR HIGH TEMPERATURE SERVICE AND IS PRESENTED IN TWO SEPARATE PARTS: THE FIRST PERTAINS TO THE DEVELOPMENT OF LABORATORY TESTS FOR THE EVALUATION OF REFRACTORY ALLCY COATINGS; THE SECOND, TO THE ARC-PLASMA-JET EVALUATION OF ABLATIVE MATERIALS, IMPREGNATED POROUS CERAMICS, REFRACTORY COMPOSITES, AND SPRAYED CERAMIC COATINGS, PART I DESCRIBES ANALYTICAL AND EXPERIMENTAL APPROACHES LEADING TO THE DEVELOPMENT OF AN ORDERLY SERIES OF TESTS DESIGNED TO CHARACTERIZE THE OXIDATION BEHAVIOR OF REFRACTORY ALLOY COATINGS AND TO DETERMINE THEIR INFLUENCE UPON THE PHYSICAL AND MECHANICAL PROPERTIES OF THE BASE METAL, PART II DESCRIBES THE SCREENING OF 78 DIFFERENT HIGH TEMPERATURE MATERIALS WITH AN ARC-PLASMA-JET TESTING FACILITY, THE SYSTEMS EVALUATED FELL INTO FOUR GENERAL CATEGORIES: ABLATIVE MATERIALS, IMPREGNATED POROUS CERAMICS, REFRACTORY COMPOSITES, OR SPRAYED CERAMIC COATINGS, TESTING PROCEDURES WERE ADJUSTED FOR EACH CLASS OF MATERIALS TO EMPHASIZE PARTICULAR PERFORMANCE CHARACTERISTICS, (AUTHOR) (U)

AD-609 342 DIV. 1/1 17/1
(TIST1/00)
DEFENSE METALS INFORMATION CENTER COLUMBUS OHIO
FIRE HAZARDS ASSOCIATED WITH THE USE OF TITANIUM
IN AIRCRAFT, (M)
TECHNICAL NOTE,
MAYKUTH,D. J. ;ERNST,R. H. ;
JUNE 64 8 P,
UNCLASSIFIED REPORT

HC $1.00
MF $0.50

DESCRIPTORS: (*AIRCRAFT FIRES, TITANIUM), (*TITANIUM, AIRCRAFT FIRES), (*FIRE SAFETY, TITANIUM), TITANIUM ALLOYS, AIRFRAMES, JET ENGINES, GAS TURBINES, IGNITION, COMBUSTION, OXYGEN, PRESSURE, JET PLANES, HIGH-TEMPERATURE RESEARCH, TEST METHODS, FRICTION, SPARK IGNITION, FLAMMABILITY (U)
IDENTIFIERS: TITANIUM ALLOY TI-5 AL-2.5 SN, TITANIUM ALLOY TI-6 AL-4V, FIRE HAZARDS (U)

HISTORICALLY, TITANIUM AND ITS ALLOYS HAVE BEEN PROVEN CAPABLE OF PERFORMING EFFICIENTLY AND SATISFACTORILY IN BOTH AIRFRAME AND AIRCRAFT GAS-TURBINE ENGINES. NEVERTHELESS, UNDER CERTAIN CONDITIONS, TITANIUM AND ITS ALLOYS ARE KNOWN TO BE CAPABLE OF IGNITION AND COMBUSTION. THIS NOTE WAS PREPARED TO REVIEW THE CONDITIONS UNDER WHICH THE IGNITION AND COMBUSTION OF AIRCRAFT COMPONENTS WERE MOST LIKELY TO OCCUR AS WELL AS TO ASSESS THE ACTUAL INCIDENCES OF SUCH FIRES. LABORATORY TESTS HAVE SHOWN THAT SHEETS OF COMMERCIALLY PURE TITANIUM AND SEVERAL OF ITS ALLOYS CAN BE IGNITED IN AIR USING AN OXYACETYLENE TORCH AND HEATING THESE MATERIALS TO THEIR MELTING TEMPERATURES (ABOUT 3000 F). THE SENSITIVITY OF TITANIUM TOWARD IGNITION AND COMBUSTION IN OXYGEN ATMOSPHERES INCREASES WITH INCREASING OXYGEN PRESSURE AND CONCENTRATION SUCH THAT WITH SUFFICIENTLY HIGH PRESSURES AND CONCENTRATIONS, BURNING CAN OCCUR AT APPRECIABLY LOWER TEMPERATURES. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-609 341 DIV, 13/1 17/1
(TIST1/00)
DEFENSE METALS INFORMATION CENTER COLUMBUS OHIO
METHODS OF CONTROLLING AND EXTINGUISHING TITANIUM
FIRES, (M)
TECHNICAL NOTE,
MAYKUTH,D, J, ;
JULY 64 5 P,
UNCLASSIFIED REPORT

HC $1.00
MF $0.50

DESCRIPTORS: (*TITANIUM, FIRES), (*FIRES, TITANIUM), (*FIRE SAFETY, TITANIUM), FIRE EXTINGUISHERS, OXIDES, METALS, POWDER METALS, COMBUSTION, BURNING RATE, GRAPHITE, SAND, WATER, HELIUM GROUP GASES, STORAGE, FLAMMABILITY (U)
IDENTIFIERS: FIRE HAZARDS, FIRE PREVENTION, DOLOMITE (U)

THE PURPOSE OF THIS NOTE IS SIMPLY TO SUMMARIZE THE METHODS AND MATERIALS WHICH HAVE BEEN DEVELOPED TO DATE FOR THE CONTROL AND EXTINGUISHMENT OF FIRES INVOLVING TITANIUM METAL, THE PROBLEMS OF CONTROLING AND EXTINGUISHING TITANIUM FIRES ARE GREATLY COMPOUNDED BY THE EXTREMELY HIGH AFFINITY OF TITANIUM FOR OXYGEN AND NITROGEN, AND THE FACT THAT THE OXIDES OF TITANIUM ARE READILY SOLUBLE IN THE MOLTEN METAL, THUS, HEATED TITANIUM CAN READILY REDUCE MANY OF THE COMPOUNDS OR LIQUIDS NORMALLY USED AS EXTINGUISHING AGENTS, AND THE ABSENCE OF A PROTECTIVE OXIDE FILM RESULTS IN THE PRESENCE OF A CONTINUOUSLY REACTIVE SURFACE ON THE MOLTEN METAL, (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-610 970 DIV. 10/1
(TISTI/00)
DIRECTORATE OF SCIENTIFIC INFORMATION SERVICES
OTTAWA (ONTARIO)
SOLID GASOLINE, (U)

LOSEV,B. I. ;
MAY 58 6 P.
T-289-R
TT , 60-22008

HC $1.00
MF $0.50

UNCLASSIFIED REPORT
TRANS. OF AKADEMIYA NAUK SSSR, VESTNIK, 1958,
V, 28, NO. 1, P. 65-68,
ALSO AVAILABLE FROM NRC AS C-2695,

DESCRIPTORS: (*GASOLINE, PACKAGING), (*PETROLEUM, COLLOIDS), HYDROCARBONS, SOLIDS, STABILIZATION, FILMS, ALBUMENS, PLASTICS, PLASTICIZERS, HANDLING, STORAGE, FIRE SAFETY, USSR (U)
IDENTIFIERS: SOLID GASOLINE (U)

A METHOD IS DESCRIBED FOR 'PACKAGING' GASOLINE, AND THE TECHNOLOGICAL FLOW-CHART FOR THIS PURPOSE IS PRESENTED, THE PRODUCTION OF BRIQUETTES OF 'PACKAGED' LIQUID HYDROCARBONS INVOLVES TWO PROCESSES: THE PRODUCTION OF A HIGH-CONCENTRATION EMULSION, AND SUBSEQUENT PLASTIFICATION, THE EMULSION IS PRODUCED WITH A GEAR-TYPE OR DISC-TYPE EMULSIFIER, IN WHICH THE AGITATION OF TWO MUTUALLY IMMISCIBLE LIQUIDS OF DIFFERENT POLARITY BRINGS ABOUT THE FORMATION OF EMULSIONS OF TUPE O-W (OIL IN WATER) AND W-O (WATER IN OIL), (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO.010009

AD-611 764 DIV. 18/1 13/1
(TIST3/00)
DUNLAP AND ASSOCIATES INC DARIEN CONN
REQUIREMENTS FOR LOCAL PLANNING TO COVER HAZARDS
OF FALLOUT. VOLUME I. (U)
FINAL REPT.. VOL. 1.
F
JAN. 65 63 P.
DRD-64-110 VOL. 1
OCD OS63 161 4531A

HC $3.00
MF $0.75

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, EFFECTIVENESS), (*SHELTERS, MANAGEMENT PLANNING), POPULATION, DISTRIBUTION, TRAFFIC, PASSENGER VEHICLES, FIRES, FIRE SAFETY, HAZARDS, RADIOACTIVE FALLOUT, LINEAR PROGRAMMING, CONNECTICUT (U)

THE STUDY CONCENTRATED UPON DEVELOPING EFFECTIVE PLANS FOR ASSIGNING SHELTERS TO POPULATION, AND FOR BRINGING THE POPULATION TO THE SHELTER. TWO MEDIUM-SIZED TOWNS IN CONNECTICUT, STAMFORD AND WATERBURY, WERE STUDIED IN DETAIL. FOR EACH TOWN, A STUDY WAS MADE ON THE EFFECTIVENESS OF A NUMBER OF PLANS OF VARYING DETAIL AND COMPLEXITY IN GETTING PEOPLE TO SHELTER. IN ALL PLANS IT WAS ASSUMED THAT ENOUGH TRAFFIC CONTROL WOULD BE SET UP TO AVOID BLOCKAGES OF TRAFFIC NEAR SHELTERS, AND THAT THE POPULATION WOULD KNOW TO WHAT SHELTER AREAS THEY HAD BEEN ASSIGNED, AND HOW THEY WERE SUPPOSED TO GET THERE. TWO TYPES OF SHELTER ASSIGNMENT WERE MADE: THE FIRST WAS BY CENSUS TRACT, THE SECOND BY INDIVIDUAL LOCATION. IN THE FIRST, PEOPLE FROM SHELTER-POOR CENSUS TRACTS WERE DIRECTED TO SHELTER-RICH CENSUS TRACTS, ACCORDING TO A LINEAR PROGRAMMING METHOD AIMED AT MINIMIZING DISTANCE TRAVELED. IN THE SECOND, A SIMILAR METHOD WAS USED TO ASSIGN PEOPLE TO ACTUAL BUILDINGS. STUDIES WERE MADE OF VARIOUS SPEEDS OF MOVEMENT TO SHELTER AND THEIR EFFECTS UPON RATE AT WHICH THE POPULATION WAS SHELTERED. PLANNING PROBLEMS ASSOCIATED WITH PRIMARY AND SECONDARY FIRES WERE GIVEN CURSORY EXAMINATION. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-600 261 DIV. 13/1 16/1
(TIST1/00)
FACTORY MUTUAL RESEARCH CORP.; NORWOOD, MASS.
FIRE HAZARD TO FALLOUT SHELTER OCCUPANTS. A CLASSIFICATION GUIDE. (M)
FINAL RESEARCH REPT.
F
SMITH,J. B.;COUSINS,E. W.;NEWMAN,R. M.;
APR. 64 40 P.
FMRC15328
OCD PS64 40 1133A

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, SHELTERS), (*SHELTERS, FIRES), HAZARDS, BUILDINGS, STANDARDS, CLASSIFICATION, URBAN AREAS, CIVIL DEFENSE SYSTEMS (U)

THIS CLASSIFICATION GUIDE WAS PREPARED FOR THE USE OF ARCHITECTS AND ENGINEERS. THE GUIDE WAS FIELD-TESTED BY SEVERAL ARCHITECTS AND A CONSULTING ENGINEER. TRIAL SURVEYS WERE MADE AT EXISTING DESIGNATED SHELTERS IN BUILDINGS OF VARIED CONSTRUCTION, OCCUPANCY, AND AGE, IN RELATIVELY CONGESTED AREAS. THE GUIDE WAS FOUND TO BE SIMPLE AND EASY TO USE. CONSISTENT RESULTS WERE OBTAINED. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-610 819 DIV. 18/1 13/1
(TISTI/00)
FACTORY MUTUAL RESEARCH CORP., NORWOOD, MASS.
FIRE SAFETY UPGRADING FOR FALLOUT SHELTERS IN BUILDINGS. (M)
FINAL REPT.,
F
SMITH, JAMES B. ;COUSINS, EDWARD W. ;MILLER, MYRON J. ;NEWMAN, R. MURRAY ;
NOV. 64 17 P. HC $1.00
FMRC-15903 MF $0.50
N228 62479 65613 113A
UNCLASSIFIED REPORT

DESCRIPTORS: (*SHELTERS, FIRE SAFETY), (*FIRE SAFETY, BUILDINGS), CIVIL DEFENSE SYSTEMS, RADIOACTIVE FALLOUT, FIRES, HAZARDS, FIRE ALARM SYSTEMS, FIRE EXTINGUISHERS, THERMAL INSULATION, PERSONNEL, ANALYSIS, CONSTRUCTION (U)
IDENTIFIERS: FALLOUT SHELTERS (U)

THE REPORT SUGGESTS METHODS, MAINLY UNTRIED, FOR UPGRADING ON AN EMERGENCY BASIS THE FIRE SAFETY OF EXISTING FALLOUT SHELTER BUILDINGS. THE METHODS SUGGESTED ARE NOT SUBSTITUTES FOR NORMAL PEACETIME PROTECTION WHICH MAY BE: (1) HARD TO IMPLEMENT, (2) TOO COSTLY, OR (3) INCOMPATIBLE WITH FLEXIBILITY OF BUILDING OPERATIONS. THE REPORT IS BASED ON THE FOLLOWING CONCEPTS: (1) FIRE EXPOSURES TO A SHELTER BUILDING FROM WITHOUT MUST BE DENIED ENTRY TO THE SHELTER BUILDING, (2) FIRES IN A SHELTER BUILDING MUST BE PROMPTLY DETECTED AND SUPPRESSED OR EXTINGUISHED, AND (3) OCCUPANTS MUST BE PROVIDED WITH AN ENVIRONMENT WHICH WILL SUSTAIN LIFE. MOST OF THE REMEDIES SUGGESTED ARE PASSIVE SUCH AS PHYSICAL BARRIERS TO PREVENT FIRE ENTRY TO THE SHELTER BUILDING. SPECIFICALLY, THERMAL BARRIERS FOR WINDOW OPENINGS, AUTOMATIC SMOKE DETECTORS WITH MANUAL RESPONSE BY FIRE FIGHTING SHELTER PERSONNEL, AND ENVIRONMENTAL SEALS FOR SHELTER AREAS ARE RECOMMENDED AS FEASIBLE UPGRADING REMEDIES. (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-601 161 DIV, 10/1
(TISTO/50)
FACTORY MUTUAL RESEARCH CORP,, NORWOOD, MASS,
HIGH SPEED DETECTION AND CONTROL OF FIRE IN SOLID
PROPELLANT FUEL, (U)
INTERIM REPT, NO, 6, 31 JAN 63-31 JAN
64,
6
JAN, 64 8 P,
14763
NBY24974 1803 10

HC $0.50
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROPELLANTS, FIRE SAFETY) (*SOLID ROCKET FUELS, FIRE SAFETY), IGNITION, PROPELLANT GRAINS, QUENCHING (INHIBITION), HYDRAULIC SYSTEMS, DETERMINATION, FUELS (U)

THE OBJECT OF THIS WORK IS TO DETERMINE WHETHER AND HOW FIRE DETECTION AND CONTROL OF BURNING ARE POSSIBLE AND PRACTICAL WHERE THE HAZARDS OF HIGH-ENERGY, RAPIDLY BURNING, SOLID PROPELLENT EXPOSE THE INTERESTS OF THE BUREAU OF YARDS AND DOCKS, THE WORK DONE BY THE FACTORY MUTUAL RESEARCH CORPORATION DURING THE PAST 12 MONTHS BEGAN WITH THE KNOWLEDGE THAT CERTAIN DETECTION SYSTEMS CAN RECOGNIZE AND RESPOND TO FIRE, INCLUDING PROPELLANT FIRE, WELL WITHIN 5 MILLISECONDS, THIS SPEED OF RESPONSE WAS CONSIDERED TO BE SATISFACTORY SINCE IT WOULD AMOUNT TO ONLY A SMALL FRACTION OF THE TOTAL TIME REQUIRED TO APPLY ANY EXTINGUISHING AGENT TO A FIRE, CURRENTLY, A TEST PROGRAM IS IN PROGRESS USING 10 LB, HOLLOW CYLINDRICAL SAMPLES OF POLARIS A3 PROPELLANT, COMPLETE EXTINGUISHMENT OF PROPELLANT FIRE AT ATMOSPHERIC PRESSURE AND AFTER VARIOUS PRE-BURN INTERVALS UP TO 20 SEC WAS ACCOMPLISHED AND DOCUMENTED, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-602 095 DIV. 10/1
(TIST1/10)
FACTORY MUTUAL RESEARCH CORP., NORWOOD, MASS.
HIGH SPEED FIRE DETECTION AND CONTROL OF FIRE IN
SOLID PROPELLANT FUEL. (U)
PROGRESS REPT. NO. 7, PHASE 2, 31 JAN-
30 APR 64,
7
MAY 64 3 P. HC $1.10
MF $0.50
15699
NBY24974

UNCLASSIFIED REPORT

DESCRIPTORS: (*SOLID ROCKET PROPELLANTS, FIRE SAFETY), (*FIRES, SOLID ROCKET PROPELLANTS), (*EXHAUST GASES, COMBUSTION), ROCKET PROPELLANT GRAINS, QUENCHING (INHIBITION), SOLID ROCKET FUELS, WATER ENTRY
(U)

WORK WAS BASED ON THE SUCCESSFUL QUENCHES OF PROPELLANT FIRE AT ESSENTIALLY ATMOSPHERIC PRESSURE. THE TEST PROGRAM INVOLVING 10 LB. HOLLOW, CYLINDRICAL SAMPLES OF A-3 PROPELLANT IS NEARLY COMPLETE. EXHAUST GAS CONFINEMENT BY CIRCULAR ORIFICES DURING THE FIRING OF THESE SAMPLE GRAINS BOTH INCREASED THE BURNING PRESSURE AND REDUCED THE AVAILABLE AREA OF WATER ENTRY. SUCCESS IN EXTINGUISHING PROPELLANT FIRE AT ELEVATED BURNING PRESSURES LED TO THE ACTIVE PREPARATION OF LARGER SCALE FIRE TESTS PROPOSED FOR MID-1964 AT THE NAVAL WEAPONS LABORATORY, DAHLGREN, VIRGINIA. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTFR

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-609 018 DIV. 13/1
(TIST2/00)
FEDERAL FIRE COUNCIL WASHINGTON D C
FEDERAL FIRE EXPERIENCE FOR FISCAL YEAR 1963,
(M)
HC $2.00
MF $0.50
NOV. 64 48 P.
UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*FIRE SAFETY, UNITED STATES GOVERNMENT), (*FIRES, COSTS), FEDERAL BUDGETS, FOREST FIRES, SHIP FIRES, AEROSPACE CRAFT, BUILDINGS, WOUNDS AND INJURIES, FIRE PUMPS, MANAGEMENT PLANNING, STATISTICAL DATA, REPORTS (U)

THE ANNUAL REPORT OF FIRE LOSS EXPERIENCE IN 1963 IS PRESENTED BY THE FEDERAL FIRE COUNCIL IN ORDER TO SERVE THE FEDERAL COMMUNITY. THE COMPOSITE FEDERAL FIRE LOSS EXPERIENCE IS CONSIDERED TO BE OF VALUE TO EACH AGENCY FOR PLANNING AND LEARNING. IT IS WASTEFUL FOR AGENCIES TO INSIST ON PERSONAL EXPERIENCE AS THE SOLE CRITERION FOR PLANNING A FIRE SAFETY PROGRAM. LEARNING BASED ON INDIVIDUAL AGENCY EXPERIENCE IS THE MOST EFFECTIVE-BUT, THE COST CAN BE HIGH IN DOLLARS AND LIVES. EACH AGENCY IS ENCOURAGED TO USE THIS REPORT AS A SPRINGBOARD FOR SELF-EVALUATION. THE COUNCIL WILL USE IT TO PLAN FUTURE FIRE LOSS MANAGEMENT PROGRAMS.
(U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-606 721 DIV. 13/1 23/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D. C.
FIRE SAFETY TRAINING AND SPEAKERS DIRECTORY.
(U)
HC $2.00
MF $0.50

JAN. 64 43 P.
UNCLASSIFIED REPORT
LIMITED SUPPLY ON HAND; WHEN EXHAUSTED, DOCUMENT WILL BE
AVAILABLE IN MICROFICHE ONLY.

DESCRIPTORS: (*UNITED STATES GOVERNMENT, FIRE SAFETY), (*FIRE SAFETY, TRAINING), (*GOVERNMENT EMPLOYEES, TRAINING), MANAGEMENT ENGINEERING, PERSONNEL MANAGEMENT, EDUCATION, RADIATION HAZARDS, FIRES, FIRE EXTINGUISHERS, FIRE ALARM SYSTEMS, FIRE PUMPS, HAZARDS, CIVIL DEFENSE, DISASTERS, INDUSTRIES (U)

THE GOVERNMENT EMPLOYEES TRAINING ACT (PUBLIC LAW 85-507) MAKES AVAILABLE TO PRACTICALLY EVERY FEDERAL AGENCY A MANAGEMENT TOOL WHICH, PROPERLY USED, CAN HELP SIGNIFICANTLY TO INCREASE EFFICIENCY AND EFFECTIVENESS OF OPERATIONS. IT PLACES RESPONSIBILITY FOR TRAINING SQUARELY ON THE HEAD OF THE AGENCY WHO IS NOT ONLY AUTHORIZED BUT DIRECTED TO ESTABLISH NEEDED TRAINING PROGRAMS. EACH AGENCY COVERED BY THE ACT IS AUTHORIZED, SUBJECT TO CERTAIN REQUIREMENTS OF LAW AND REGULATION, (1) TO ESTABLISH, OR STRENGTHEN, NEEDED INSERVICE TRAINING PROGRAMS; (2) TO SEND ITS EMPLOYEES TO TRAINING PROGRAMS CONDUCTED BY OTHER GOVERNMENT AGENCIES, TO THE EXTENT THOSE AGENCIES ARE ABLE TO ACCEPT THEM, AND TO ADMIT TO ITS OWN PROGRAMS EMPLOYEES FROM OTHER AGENCIES WITH OR WITHOUT REIMBURSEMENT; (3) TO SEND ITS EMPLOYEES TO NON-GOVERNMENT FACILITIES FOR NEEDED TRAINING WHICH IS NOT REASONABLY AVAILABLE WITHIN GOVERNMENT, AND TO PAY ALL OR ANY PART OF THE EXPENSES OF SUCH TRAINING; (4) TO PAY EXPENSES OF EMPLOYEES ATTENDING MEETINGS THAT WILL CONTRIBUTE TO BETTER SUPERVISION AND MANAGEMENT OF ITS SUBSTANTIVE FUNCTIONS, AS WELL AS MEETINGS CONCERNED WITH THE SUBSTANTIVE FUNCTIONS THEMSELVES; (5) TO PERMIT ITS EMPLOYEES TO ACCEPT TRAINING CONTRIBUTIONS AND AWARDS FROM NON-GOVERNMENT SOURCES; AND (6) TO PERMIT IS EMPLOYEES TO ACCEPT PAYMENT FROM OUTSIDERS FOR CERTAIN EXPENSES CONNECTED WITH MEETINGS WHICH THEY ATTEND. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO,010009

AD-600 387 DIV, 1/1 14/1
(TIST2/50)
FEDERAL AVIATION AGENCY, WASHINGTON, D, C,
FLAMMABILITY AND SMOKE CHARACTERISTICS OF AIRCRAFT
INTERIOR MATERIALS, (M)
FINAL TECHNICAL REPT,
F
MARCY,JOHN F, ;NICHOLAS,E, B, ;DEMAREE-
,J, E, ;
JAN, 64 112 P, 311 3X1
FAA ADS3

HC $2.50
MF $0.75

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRE-RESISTANT TEXTILES, AIRCRAFT) (*PLASTICS, TEST METHODS) (*METALS, THICKNESS) (*GLASS TEXTILES, AIRCRAFT FIRES) (*LAMINATES, FLAMMABILITY) AVIATION INDUSTRY, SAFETY, AIRPLANE PANELS, WEIGHT, CHEMICAL ANALYSIS, SMOKES, TOXICITY, DEGRADATION, WEAR RESISTANCE, CLEANING, STANDARDS, SPECIFICATIONS (U)

FLAMMABILITY AND SMOKE CHARACTERISTICS OF INTERIOR MATERIALS WERE DETERMINED FROM A SELECTION OF 109 MATERIALS REPRESENTATIVE OF PRESENT USAGE IN THE AVIATION INDUSTRY, A COMPARISON WAS MADE OF THE FLAME-RESISTANT CHARACTERISTICS EXHIBITED BY THE DIFFERENT MATERIALS ON THE BASIS OF: (1) TEST METHOD, (2) THICKNESS, WEIGHT, COMPOSITION AND BACKING, (3) FIRE-RETARDANT TREATMENT, AND (4) DEGRADATION FROM USE AND CLEANING, BY EMPLOYING TEST METHODS DEFINED IN FAA FLIGHT STANDARDS SERVICE RELEASE 453 AND FEDERAL SPECIFICATION CCC-T-191B, BURNING CHARACTERISTICS WERE OBTAINED IN TERMS OF BURN RATE, BURN LENGTH, AND SELF-EXTINGUISHING TIME, A FLAME-SPREAD INDEX AND SMOKE FACTOR ALSO WERE OBTAINED BY MAKING USE OF THE RADIANT PANEL TEST APPARATUS, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-611 160 DIV. 13/1 18/1
(TIST2/00)
FEDERAL CIVIL DEFENSE ADMINISTRATION WASHINGTON
D C
DAMAGE TO CONVENTIONAL AND SPECIAL TYPES OF RESIDENCES EXPOSED TO NUCLEAR EFFECTS. (U)
REPT. FOR FEB-MAY 55,
RANDALL,PHILIP A. ;
APR. 61 81 P. 31 1
WT . 1194

HC $2.00
MF $0.75

UNCLASSIFIED REPORT

REPT. ON OPERATION TEAPOT.
RESEARCH DONE IN COOPERATION WITH THE FEDERAL HOUSING ADMINISTRATION, WASHINGTON, D. C., AND THE HOUSING AND HOME FINANCE AGENCY, WASHINGTON, D. C.

DESCRIPTORS: (*HOUSING, NUCLEAR EXPLOSION DAMAGE), (*NUCLEAR EXPLOSION DAMAGE, HOUSING), (*CIVIL DEFENSE SYSTEMS, HOUSING), BUILDINGS, WOOD, BRICK, REINFORCED CONCRETE, STRUCTURAL PROPERTIES, VULNERABILITY, NUCLEAR EXPLOSIONS, CIVIL ENGINEERING, PHOTOGRAPHS (U)
IDENTIFIERS: TEAPOT OPERATION (U)

AT THE NEVADA TEST SITE OF THE ATOMIC ENERGY COMMISSION, 10 RESIDENTIAL STRUCTURES WERE EXPOSED TO THE EXPLOSION OF A NUCLEAR DEVICE (APPLE II) OF APPROXIMATELY 30-KT YIELD, DETONATED ATOP A 500-FT TOWER, TO TEST THEIR BEHAVIOR AND RESISTANCE TO NUCLEAR WEAPONS EFFECTS AND TO OBTAIN DATA THAT WILL CONTRIBUTE TO THE DEVELOPMENT OF IMPROVED PROTECTIVE DESIGNS. FROM A DETERMINATION OF THE BEHAVIOR OF THESE STRUCTURES UNDER BLAST, THERMAL, AND NUCLEAR RADIATION EFFECTS, IT SHOULD BE POSSIBLE TO DETERMINE THE BEST STEPS TO BE TAKEN FOR THE PROTECTION OF FAMILIES LIVING IN SUCH STRUCTURES AND TO OBTAIN NECESSARY ADDITIONAL DATA ON THE STRENGTHS OF THE STRUCTURES AS A WHOLE AND POSSIBLE WEAKNESSES IN COMPONENT PARTS. THE PROJECT WAS CONCERNED PRIMARILY WITH BLAST AND RADIATION EFFECTS ON RESIDENTIAL STRUCTURES, AND PRECAUTIONS WERE TAKEN TO AVOID IGNITION OF THE STRUCTURES BY THE THERMAL ENERGY OF THE EXPLOSION. DATA OBTAINED ARE EXPECTED TO BE USEFUL ALSO IN THE DEVELOPMENT OF METHODS FOR STRENGTHENING THE STRUCTURES WITHIN LIMITS OF PRACTICAL ECONOMY, AND IN PROVIDING INFORMATION ON THE POSSIBLE USE OF THE STRUCTURES FOR HOUSING WITHOUT MAJOR REPAIRS FOLLOWING A NUCLEAR EVENT. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-611 251 DIV, 13/1 20/1 22/1
(TIST3/00)
FEDERAL CIVIL DEFENSE ADMINISTRATION WASHINGTON
D C
EFFECTS OF AN ATOMIC EXPLOSION ON TWO TYPICAL TWO-STORY-AND-BASEMENT-WOODFRAME HOUSES, (U)

BYRNES,JOSEPH B, ;
SEPT, 53 63 P, 21 2
WT , 792

HC $3.00
MF $0.75

UNCLASSIFIED REPORT

REPT, ON OPERATION UPSHOT-KNOTHOLE, NEVADA PROVING GROUNDS, MAR-JUN 53,

DESCRIPTORS: (*NUCLEAR EXPLOSION DAMAGE, BUILDINGS), BUILDINGS, GAMMA RAYS, THERMAL RADIATION, VISUAL INSPECTION, PHOTOGRAPHY, BLAST, RADIATION DAMAGE (U)

IDENTIFIERS: UPSHOT-KNOTHOLE OPERATION (U)

TWO TYPICAL TWO-STORY FRAME HOUSES, WITHOUT UTILITIES, WERE LOCATED AT 7500 AND 3500 FT FROM GROUND ZERO OF A 16,4-KT BOMB EXPLODED AT 300 FT ABOVE THE GROUND, EXPOSURE OF THE HOUSES WAS FOR PUBLIC DEMONSTRATION PURPOSES AND TO STUDY THE GAMMA-RADIATION SCATTER AND THE EFFECTS OF THERMAL RADIATION AND BLAST ON EACH HOUSE, BOTH HOUSES WERE FURNISHED, AND, IN EACH, DEPARTMENT-STORE MANNEQUINS WERE PLACED IN THE DINING AND LIVING ROOMS, FILM BADGES TO MEASURE GAMMA RADIATION WERE PLACED IN LAYERS THROUGHOUT THE HOUSE AT 7500 FT AND IN THE BASEMENT OF THE HOUSE AT 3500 FT, VISUAL INSPECTION AND PHOTOGRAPHY WERE UTILIZED TO STUDY THERMAL-RADIATION AND BLAST EFFECTS, CONCLUSIONS: A CONVENTIONAL WOOD-FRAME HOUSE WILL BE SEVERELY DAMAGED AT AN OVERPRESSURE OF 2 PSI AND WILL BE DESTROYED AT 5 PSI, DAMAGE TO MANNEQUINS INDICATES THAT HUMAN BEINGS WITHOUT SHELTER IN THE SAME LOCATIONS WOULD HAVE BEEN INJURED IN THE FAR-RANGE HOUSE AND EITHER KILLED OR SERIOUSLY INJURED IN THE NEAR HOUSE BY THE EFFECTS OF BLAST, CONVENTIONAL METHODS OF WOOD-FRAME HOUSE CONSTRUCTION, EVEN WITH THE BEST OF MATERIALS AND WORKMANSHIP, CANNOT PROVIDE SUFFICIENT STRENGTH TO RESIST PRESSURES SUCH AS EXISTED AT THE NEAR RANGE, (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-609 018 DIV. 13/1
(TIST2/00)
FEDERAL FIRE COUNCIL WASHINGTON D C
FEDERAL FIRE EXPERIENCE FOR FISCAL YEAR 1963.
(M)
HC $2.00
MF $0.50

NOV. 64 48 P.
UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*FIRE SAFETY, UNITED STATES GOVERNMENT), (*FIRES, COSTS), FEDERAL BUDGETS, FOREST FIRES, SHIP FIRES, AEROSPACE CRAFT, BUILDINGS, WOUNDS AND INJURIES, FIRE PUMPS, MANAGEMENT PLANNING, STATISTICAL DATA, REPORTS (U)

THE ANNUAL REPORT OF FIRE LOSS EXPERIENCE IN 1963 IS PRESENTED BY THE FEDERAL FIRE COUNCIL IN ORDER TO SERVE THE FEDERAL COMMUNITY. THE COMPOSITE FEDERAL FIRE LOSS EXPERIENCE IS CONSIDERED TO BE OF VALUE TO EACH AGENCY FOR PLANNING AND LEARNING. IT IS WASTEFUL FOR AGENCIES TO INSIST ON PERSONAL EXPERIENCE AS THE SOLE CRITERION FOR PLANNING A FIRE SAFETY PROGRAM. LEARNING BASED ON INDIVIDUAL AGENCY EXPERIENCE IS THE MOST EFFECTIVE-BUT, THE COST CAN BE HIGH IN DOLLARS AND LIVES. EACH AGENCY IS ENCOURAGED TO USE THIS REPORT AS A SPRINGBOARD FOR SELF-EVALUATION. THE COUNCIL WILL USE IT TO PLAN FUTURE FIRE LOSS MANAGEMENT PROGRAMS.
(U)

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DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO.010009

AD-606 727   DIV.   13/1   16/1   23/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D. C.
FIRE DEPARTMENT ACCIDENT ANALYSIS WATER TESTING,
AND FIREFIGHTER SAFETY: A TRILOGY.   (U)   HC $2.00
MF $0.50
JUNE 62   47 P.
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRE SAFETY, CASUALTIES), (*HAZARDS, FIRE SAFETY), (*ACCIDENTS, FIRE SAFETY), WOUNDS AND INJURIES, PERSONNEL, BURNS, DROWNING, RADIATION HAZARDS, MEDICAL EQUIPMENT, MEDICAL PERSONNEL, SHOCK (PATHOLOGY), ANOXIA, GASES, TOXICITY, ARTIFICIAL RESPIRATION, SPRINKLERS, FIRE PUMPS, WATER
(U)

INJURIES SUFFERED BY FIREMEN ARE PRESENTED AND ANALYZED. THE ORGANIZATION AND PLANNING FOR THE CARE OF INJURED FIREMEN IS OUTLINED FROM THE TIME OF INJURY TO HIS RETURN TO DUTY. CERTAIN CONDITIONS SPECIFIC TO FIRE-FIGHTING ARE DISCUSSED WITH SPECIAL REFERENCE TO PREVENTION AND TREATMENT. INCLUDED ARE INJURIES WHILE SLIDING POLES, AUTO ACCIDENTS GOING TO FIRES, COLLAPSES OF BUILDINGS, CHEST INJURIES, EXPLOSIONS, BACK INJURIES, CHEMICAL TRAUMA, EXHAUSTION, PNEUMONIC CARDIAC EFFECTS AND EXPOSURE TO IONIZING RADIATION.   (U)

AD-606 728 DIV. 13/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D, C,
FIRE PREVENTION WEEK SUPPLEMENT, (U) HC $2.00
MF $0.50

AUG, 63 43 P,
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRE SAFETY, UNITED STATES GOVERNMENT), HISTORY, FIRE EXTINGUISHERS, FIRE ALARM SYSTEMS, SPRINKLERS, WATER SUPPLIES, TRAINING, RESEARCH PROGRAM ADMINISTRATION, DAMAGE, COSTS, MAINTENANCE (U)

EACH YEAR THE PRESIDENT OF THE UNITED STATES PROCLAIMS THE WEEK CONTAINING THE ANNIVERSARY DATE (OCTOBER 9) OF THE 1871 CHICAGO FIRE AS 'FIRE PREVENTION WEEK,' MANY ORGANIZATIONS AND INDIVIDUALS WERE INVOLVED IN THE ESTABLISHMENT OF A NATIONAL OBSERVANCE OF FIRE PREVENTION ACTIVITIES. THE PURPOSE OF THE NATIONAL OBSERVANCE IS TO DIRECT EVERYONE'S ATTENTION TO THE LARGE NUMBER OF DEATHS AND INJURIES AND LOSS OF PROPERTY FROM FIRE, (U)

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DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO,010009

AD-606 722 DIV, 13/1 8/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D, C,
FIRE PROTECTION FOR ESSENTIAL ELECTRONIC EQUIPMENT,-
(U)
RECOMMMOCOMMENDED PRACTICES,
1
MAR, 62   38 P,
RP-1

HC $2.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRE SAFETY, ELECCTRONIC EQUIPMENT), (*ELECTRONIC EQUIPMENT, FIRE SAFETY), STORAGE, DESIGN, HAZARDS, HEAT-RESISTANT MATERIALS, SPRINKLERS, FIRE ALARM SYSTEMS, FIRE EXTINGUISHERS, SPECIFICATIONS (U)

(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-606 721 DIV. 13/1 23/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D. C.
FIRE SAFETY TRAINING AND SPEAKERS DIRECTORY, HC $2.00
(U) MF $0.50

JAN. 64 43 P.
UNCLASSIFIED REPORT
LIMITED SUPPLY ON HAND; WHEN EXHAUSTED, DOCUMENT WILL BE
AVAILABLE IN MICROFICHE ONLY.

DESCRIPTORS: (*UNITED STATES GOVERNMENT, FIRE SAFETY), (*FIRE SAFETY, TRAINING), (*GOVERNMENT EMPLOYEES, TRAINING), MANAGEMENT ENGINEERING, PERSONNEL MANAGEMENT, EDUCATION, RADIATION HAZARDS, FIRES, FIRE EXTINGUISHERS, FIRE ALARM SYSTEMS, FIRE PUMPS, HAZARDS, CIVIL DEFENSE, DISASTERS, INDUSTRIES (U)

THE GOVERNMENT EMPLOYEES TRAINING ACT (PUBLIC LAW 85-507) MAKES AVAILABLE TO PRACTICALLY EVERY FEDERAL AGENCY A MANAGEMENT TOOL WHICH, PROPERLY USED, CAN HELP SIGNIFICANTLY TO INCREASE EFFICIENCY AND EFFECTIVENESS OF OPERATIONS. IT PLACES RESPONSIBILITY FOR TRAINING SQUARELY ON THE HEAD OF THE AGENCY WHO IS NOT ONLY AUTHORIZED BUT DIRECTED TO ESTABLISH NEEDED TRAINING PROGRAMS. EACH AGENCY COVERED BY THE ACT IS AUTHORIZED, SUBJECT TO CERTAIN REQUIREMENTS OF LAW AND REGULATION, (1) TO ESTABLISH, OR STRENGTHEN, NEEDED INSERVICE TRAINING PROGRAMS; (2) TO SEND ITS EMPLOYEES TO TRAINING PROGRAMS CONDUCTED BY OTHER GOVERNMENT AGENCIES, TO THE EXTENT THOSE AGENCIES ARE ABLE TO ACCEPT THEM, AND TO ADMIT TO ITS OWN PROGRAMS EMPLOYEES FROM OTHER AGENCIES WITH OR WITHOUT REIMBURSEMENT; (3) TO SEND ITS EMPLOYEES TO NON-GOVERNMENT FACILITIES FOR NEEDED TRAINING WHICH IS NOT REASONABLY AVAILABLE WITHIN GOVERNMENT, AND TO PAY ALL OR ANY PART OF THE EXPENSES OF SUCH TRAINING; (4) TO PAY EXPENSES OF EMPLOYEES ATTENDING MEETINGS THAT WILL CONTRIBUTE TO BETTER SUPERVISION AND MANAGEMENT OF ITS SUBSTANTIVE FUNCTIONS, AS WELL AS MEETINGS CONCERNED WITH THE SUBSTANTIVE FUNCTIONS THEMSELVES; (5) TO PERMIT ITS EMPLOYEES TO ACCEPT TRAINING CONTRIBUTIONS AND AWARDS FROM NON-GOVERNMENT SOURCES; AND (6) TO PERMIT IS EMPLOYEES TO ACCEPT PAYMENT FROM OUTSIDERS FOR CERTAIN EXPENSES CONNECTED WITH MEETINGS WHICH THEY ATTEND. (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-606 717 DIV, 13/1 32/1
(TIST2/00)
FEDERAL FIRE COUNCIL, WASHINGTON, D, C,
SALVAGING AND RESTORING RECORDS DAMAGED BY FIRE
AND WATER, (U)
RECOMMENDED PRACTICES,
2
MAR, 63 32 P,
RP-2

HC $2.00
MF $0.50

UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY,

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY,

DESCRIPTORS: (*RECORDS, FIRE SAFETY), (*FIRE SAFETY, RECORDS), (*FIRES, DAMAGE), WATER, DAMAGE, HAZARDS, MAPS, MAGNETIC TAPE, DOCUMENTATION, DRIERS (APPARATUS) (U)

THIS DOCUMENT DESCRIBES SEVERAL SIMPLE READILY APPLIED MEANS OF SALVAGIN G RECORDS DAMAGED BY FIRE AND WATER, THE METHODS CAN BE PERFORMED WITHOUT HARD-TO-ACQUIRE EQUIPMENT OR SKILLED LABOR, ELABORATE TECHNICAL METHODS OF REPAIR AND REHABILITATION OF ARCHIVES OR LIBRARY MATERIAL ARE NOT DESCRIBED HERE, RATHER, THE STEPS OUTLINED ARE FOR THOSE INDIVIDUALS WHO ARE CALLED UPON TO RESTORE OFFICE FILES FOR THE IMMEDIATE RESUMPTION OF EVERY DAY OPERATIONS, FOR THE RESTORATION OF INTRINSICALLY VALUABLE MATERIALS, PROFESSIONAL ADVICE SHOULD BE SOUGHT, SUCH ADVICE CAN BE OBTAINED FROM LIBRARIES, HISTORICAL SOCIETIES, OR REPRESENTATIVES OF THE GENERAL SERVICES ADMINISTRATION, NATIONAL ARCHIVES AND RECORDS SERVICE, THE STEP OUTLINED IN THIS REPORT WILL, HOWEVER, ACCOMPLISH THE NECESSARY FIRST AID MEASURES UNTIL SUCH TIME AS PROFESSIONAL REMEDIAL ACTION CAN BE TAKEN, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-603 746 DIV. 1/1 30/1
(TIST1/00)
FENWAL, INC., ASHLAND, MASS.
EVALUATION OF LIGHTWEIGHT FIRE EXTINGUISHING SYSTEM
UNDER SIMULATED FLIGHT CONDITIONS. (M)
INTERIM REPT. NO. 6, 3 FEB-2 APR 64.

6
COLE,C. J. ;
APR. 64 5 P.
N600 19 59752

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIRCRAFT FIRES, FIRE EXTINGUISHERS), (*FIRE EXTINGUISHERS, AIRCRAFT EQUIPMENT), JET ENGINE FUELS, IGNITION, JET ENGINES, SIMULATION, FUEL SPRAYS, GAS GENERATING SYSTEMS, FIRE ALARM SYSTEMS, AVIATION FUELS (U)
IDENTIFIERS: JP-4 FUELS (U)

A TOTAL OF ONE HUNDRED AND THIRTY TESTS WERE PERFORMED TO DATE, AND DATA WERE OBTAINED WHICH CONTRIBUTE TO THE EVALUATION OF A LIGHTWEIGHT FIRE EXTINGUISHING SYSTEM UNDER SIMULATED FLIGHT CONDITIONS. DESIGN WORK DURING THIS PERIOD CONSISTED ONLY OF ADAPTING SURVEILLANCE AND CONTINUOUS FIRE DETECTION SYSTEMS TO THE SIMULATED JET ENGINE USED IN THESE TESTS. TESTING DURING THIS PERIOD CONSISTED OF EXTINGUISHING FIRES CREATED IN THE SIMULATED JET ENGINE WITH BOTH CONVENTIONAL AND LIGHTWEIGHT EXTINGUISHING SYSTEMS. THE FIRES WERE CREATED BY IGNITING A SIX-GALLON-PER-MINUTE SPRAY OF JP-4 JET ENGINE FUEL WITHIN THE SIMULATED JET ENGINE. TESTS WERE PERFORMED WITH AIR FLOWS OF 2500, 6000, AND 9500 CUBIC FEET PER MINUTE; ENGINE SKIN TEMPERATURES OF 200 AND 550 DEGREES FAHRENHEIT AND WEIGHTS OF FREON 13B1 (EXTINGUISHING AGENT) OF 8, 3.7, 2.5, AND 1 POUNDS. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-603 558 DIV, 1/1
(TIST3/00)
FENWAL, INC,, ASHLAND, MASS,
SIMULATED FLIGHT TEST INVESTIGATION OF THE EFFECTIVENESS OF A LIGHTWEIGHT, AIRCRAFT, FIXED, FIRE-EXTINGUISHING SYSTEM, (M)
FINAL REPT,,
F
JUNE 64 71 P.
N600 19 59752 ,NOW61 0243C
UNCLASSIFIED REPORT

HC $3.00
MF $0.75

DESCRIPTORS: (*FIRE EXTINGUISHERS, AIRCRAFT EQUIPMENT), (*AIRCRAFT FIRES, FIRE EXTINGUISHERS), GAS-GENERATING SYSTEMS, JET ENGINES, AVIATION FUELS, SIMULATION, MILITARY REQUIREMENTS, HYDRAULIC FLUIDS (U)
IDENTIFIERS: FREON 1301 (U)

THE LIGHTWEIGHT, AIRCRAFT FIXED, FIRE-EXTINGUISHING-SYSTEM MET OR EXCEEDED THE PERFORMANCE OBJECTIVES OF U, S, NAVY, BUREAU OF WEAPONS CONTRACT N600 (19) 59752 DURING FIRE TESTS CONDUCTED UNDER SIMULATED FLIGHT CONDITIONS, A TEST APPARATUS SIMULATING THE CONDITIONS IN AN AIRCRAFT TURBINE ENGINE DURING FLIGHT WAS CONSTRUCTED. FIRE TESTS WERE CONDUCTED USING A CONVENTIONAL EXTINGUISHING SYSTEM CHARGED WITH FREON 1301, DUPLICATE TESTS WERE PERFORMED USING THE LIGHTWEIGHT, FIXED FIRE-EXTINGUISHING SYSTEM AND THE RESULTS OF THESE TESTS COMPARED, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-603 400 DIV, 27/1 10/1
(TIST2/00)
FOREIGN TECH, DIV,, AIR FORCE SYSTEMS COMMAND, WRIGHT-PATTERSON AFB, OHIO,
FLOW OF GAS IN THE CHANNEL OF AN AXIAL FRICTION TURBINE AND DEVELOPMENT OF FLAME AFTER IGNITION BY STABILIZED AND NONSTABILIZED ELECTRIC SPARK,
(U)

SOKOLOV,K, K, ;ZAGRYAZKIN,N, N, ;TIMOSHENKO,YU, I, ;
JULY 64 31 P,
HC $2.00
MF $0.50
FTD ,TT MT64 03; ,64 71175
UNCLASSIFIED REPORT
EDITED MACHINE TRANS, OF A KADEMIYA N AUK SSSR, INSTITUT DVIGATELEI, TRUDY, 1962, V, 6, P, 76-81, 110-117,

DESCRIPTORS: (*AXIAL-FLOW TURBINES, GAS FLOW), (*FLAME PROPAGATION, SPARK IGNITION), (*INTERNAL COMBUSTION ENGINES, EXPERIMENTAL DATA), COMBUSTION, FUELS, ELECTRIC DISCHARGES, SCHLIEPEN PHOTOGRAPHY, HIGH SPEED PHOTOGRAPHY, TURBINES, FLUID FLOW, USSR
(U)

(U)

DEFENSE DOCUMENTATION CENTE

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-602 309 DIV. 1/1
(TIST1/00)
FOREIGN TECH. DIV., AIR FORCE SYSTEMS COMMAND, WRIGHT-PATTERSON AFB, OHIO.
IMPACT ACTUATED MECHANISM FOR ENGAGING FIRE EXTINCTION SYSTEMS, (U)

KOROLEV,A. I. ;VINOGRADOV,A. S. ;
JUNE 64 6 P.

HC $1.00
MF $0.50

FTD ,TT TT64 180: ,64 11844
UNCLASSIFIED REPORT
UNEDITED ROUGH DRAFT TRANS OF RUSSIAN PATENT 157887, A PPL.
806537/40-23, 3 DEC 62, P. 1-2.

DESCRIPTORS: (*FIRE EXTINGUISHERS, AIRCRAFT EQUIPMENT), (*AIRCRAFT FIRES, FIRE EXTINGUISHERS), PATENTS, AIRCRAFT LANDINGS, IMPACT SHOCK, FIRE EXTINGUISHERS, DESIGN, USSR, FIRE SAFETY, ACTUATORS (U)

(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-603 295 DIV. 14/1
(TIST1/00)
FOREST PRODUCTS LAB., MADISON, WIS.
CORRELATION BETWEEN 8-FOOT TUNNEL FURNACES.
(U)
RESEARCH NOTE,
EICKNER,H. W. ;
AUG. 64 15 P.
FPL , 058

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*WOOD, FLAMMABILITY), (*FURNACES, FLAMMABILITY), FLAME PROPAGATION, TESTS, HEAT, SMOKES
(U)

FLAMMABILITY TESTS WERE CONDUCTED WITH FOUR 8-FOOT TUNNEL FURNACES ON MATCHED SAMPLES OF 14 DIFFERENT MATERIALS, AND THE RESULTS COMPARED. THE AVERAGE FLAMESPREAD INDEX VALUE FOR EACH MATERIAL WITH ANY ONE OF THE FURNACES WAS USUALLY WITHIN PLUS OR MINUS 10 PERCENT OF THE AVERAGE FOR THE MATERIAL BY THE OTHER THREE FURNACES. THE HEAT-CONTRIBUTED AND SMOKE-INDEX VALUES SHOWED GREATER VARIABILITY THAN THE FLAME-SPREAD INDEX VALUES. IN GENERAL, THE CORRELATIONS OBTAINED IN THIS SERIES OF TESTS WERE SIMILAR TO THOSE REPORTED FOR THE TWO OTHER FLAME-SPREAD METHODS-ASTM E84 (25-FOOT TUNNEL FURNACE) AND ASTM E162 (RADIANT PANEL FURNACE). (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-609 667 DIV. 12/1 14/1 26/1
(TIST4/00)
GEORGIA INST. OF TECH., ATLANTA, ENGINEERING EXPERIMENT STATION.
SLIP-CAST FUSED SILICA, (M)

HC $4.00
MF $1.00

WALTON, J. D. ;POULOS,N. E. ;
OCT. 64 142 P.
ML , TDR64 195
UNCLASSIFIED REPORT

DESCRIPTORS: (*CERAMIC MATERIALS, CASTING), (*SILICON COMPOUNDS, OXIDES), (*REENTRY VEHICLES, CERAMIC MATERIALS), REFRACTORY MATERIALS, MANUFACTURING METHODS, RADOMES, NOSE CONES, ABLATION, HEAT-RESISTANT MATERIALS, HEAT SHIELDS, TEST METHODS, TESTS, THERMAL INSULATION, COATING, HALOCARBON PLASTICS, THERMAL PROPERTIES, PHYSICAL PROPERTIES, MECHANICAL PROPERTIES, ELECTRICAL PROPERTIES, SURFACES, MELTING, RADIATION DAMAGE (U)
IDENTIFIERS: SNORT, NOTS, SLIP-CASTING (U)

THIS WORKBOOK PROVIDES A COLLECTION OF TECHNICAL DATA AND INFORMATION ON THE SLIP-CAST FUSED SILICA WORK OF THE GEORGIA INSTITUTE OF TECHNOLOGY. IT IS INTENDED TO PROVIDE SCIENTISTS AND ENGINEERS WITH THERMO-PHYSICAL, MECHANICAL, ELECTRICAL, AND NUCLEAR PROPERTIES OF SLIP-CAST FUSED SILICA. FABRICATION TECHNIQUES AND ENGINEERING DATA RELATED TO THE USE OF THIS MATERIAL FOR THERMAL PROTECTION SYSTEMS AND RADOMES ARE PRESENTED. A COMPREHENSIVE BIBLIOGRAPHY IS ALSO INCLUDED. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-609 615 DIV. 1/1
(TIST4/00)
GENERAL DYNAMICS/CONVAIR, SAN DIEGO, CALIF.
STRUCTURAL DESIGN FOR FUEL CONTAINMENT UNDER SURVIVABLE CRASH CONDITIONS. (M)
FINAL TECHNICAL REPT.,
F
NISSLEY,P. M. ;HEID,T. L. ;
AUG. 64 138 P. HC $4.00
GDC-64-222 MF $1.00
FA-WA4607
FAA , ADS19

UNCLASSIFIED REPORT

LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*AIRCRAFT FIRES, FIRE SAFETY), (*FIRE SAFETY, AIRCRAFT FIRES), (*FUEL TANKS, AVIATION SAFETY), (*AVIATION SAFETY, FUEL TANKS), AIRCRAFT, FUEL SYSTEMS, TANKS (CONTAINERS), TOUGHNESS, IMPACT SHOCK, AVIATION ACCIDENTS, DROP TESTING, STRUCTURAL PROPERTIES, AIRCRAFT EQUIPMENT, FEASIBILITY STUDIES, SURVIVAL, AERONAUTICS (U)

THIS STUDY IS AN INVESTIGATION OF CRASH-RESISTANT DESIGN PRINCIPLES FOR INTEGRAL FUEL TANKS. THE OBJECTIVE WAS TO IMPROVE FUEL CONTAINMENT AS A MEANS OF MINIMIZING OR ELIMINATING POST-CRASH FIRES DURING SEVERE BUT SURVIVABLE ACCIDENTS. AIRCRAFT TYPES STUDIED WERE MULTI-ENGINE TRANSPORTS. ANALYTICAL STUDIES INDICATE RELATIVE STRENGTHS, WEIGHTS AND COSTS FOR VARIOUS TANK CONFIGURATIONS SUBJECTED TO CONCENTRATED IMPACT, DISTRIBUTED IMPACT AND FUEL INERTIAL LOADINGS. RESULTS OF FULL-SCALE TANK TESTS SUBSTANTIATE ANALYTIC RESULTS. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-610 379 DIV. 14/1 4/1
(TISTI/00)
HOUGHTON (E. F.) AND CO., PHILADELPHIA, PA.
DEVELOPMENT OF FIRE RESISTANT WATER BASED HYDRAULIC
FLUIDS. (M)
BIMONTHLY REPT. NO. 5,
5
RAKOFF,PHILIP ;COLUCCI,G. JOHN ;SMITH,-
ROBERT K. ;
JAN. 65 17 P.
NOBS90269

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDRAULIC FLUIDS, PREPARATION), (*CORROSION INHIBITION, HYDRAULIC FLUIDS), ALKENES, ESTERS, ALCOHOLS, AROMATIC COMPOUNDS, ETHERS, GLYCOLS, FLAMMABILITY, AUTOIGNITION, INHIBITION, ADDITIVES, LUBRICATION, BENZOATES (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS, SODIUM BENZOATE (U)

EMPHASIS CENTERED ON IMPROVING THE CORROSION PROPERTIES OF A CANDIDATE FIRE RESISTANT, WATER BASED HYDRAULIC FLUID. A SERIES OF HYDROXY ALKYLENE CARBOXYLATES HAVE BEEN PREPARED AS POTENTIAL CORROSION INHIBITORS. IN ADDITION, A CONTINUING STUDY WAS MADE OF THE CORRELATION EXISTING BETWEEN CORROSION OF CONTROL PANELS IN HYDRAULIC SYSTEMS AND BENCH CORROSION TESTS. SEVERAL AROMATIC ETHER DERIVATIVES ARE CONCURRENTLY BEING EVALUATED AS AUTOIGNITION IMPROVERS. AN ATTEMPT WAS ALSO MADE TO ALTER THE STRUCTURE OF THE GLYCOL PORTION OF THE CANDIDATE FLUID SO THAT A HIGHER AUTOIGNITION TEMPERATURE IS ATTAINED IN THE FINISHED FORMULA. (AUTHOR)
(U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-605 910 DIV. 14/1 4/1
(TIST1/00)
HOUGHTON (E. F.) AND CO., PHILADELPHIA, PA.
DEVELOPMENT OF FIRE RESISTANT WATER BASED HYDRAULIC FLUIDS. (U)
BIMONTHLY REPT. NO. 3,
3
RAKOFF,PHILIP ;COLUCCI,G. JOHN ;SMITH,-ROBERT K. ; HC $1.00
MF $0.50
SEPT. 64 1 P.
NOBS90269
UNCLASSIFIED REPORT
SEE ALSO AD-602 745.

DESCRIPTORS: (*HYDRAULIC FLUIDS, FLAMMABILITY), CORROSION, AUTOIGNITION, TEMPERATURE, BORON COMPOUNDS, NITROGEN COMPOUNDS, FOAMS, TABLES, LUBRICANT ADDITIVES, GLYCOLS (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

FIRE RESISTANT, WATER BASED HYDRAULIC FLUID FORMULATIONS WERE EVALUATED FOR AUTOIGNITION TEMPERATURE, LUBRICITY, STATIC CORROSION (DETERMINED FROM THE LIQUID PHASE CORROSION TEST) AND FOR PUMP PERFORMANCE USING A VICKERS VANE PUMP. SEVERAL LARGE BATCHES OF ALKANOLAMINE BORATES AND GLYCOL BORATE CONDENSATES WERE PREPARED FOR EVALUATION AS WELL AS A NUMBER OF SYNTHETIC COMPOUNDS CONTAINING BORON AND NITROGEN. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-601 341 DIV, 13/1 20/1
(TIST2/50)
IIT RESEARCH INST., CHICAGO, ILL,
AN APPROACH TO TRANS-ATTACK FIRE SUPPRESSION IN
URBAN AREAS. (U)
FINAL REPT,
F
SALZBERG,F. ;MAATMAN,G. L. ;VODVARKA,F,
J. ;
MAR, 64 115 P,
OCD OS62 210 N6005

HC $2.50
MF $0.75

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, BUILDINGS), (*FIRES, URBAN AREAS), (*NUCLEAR EXPLOSIONS, FIRES), CIVIL DEFENSE SYSTEMS, FURNITURE, EXPLOSION EFFECTS, FIREFIGHTING VEHICLES, FIRE EXTINGUISHERS, WATER SUPPLIES, ILLINOIS (U)

IT WAS DETERMINED THAT, IN AN URBAN AREA EXPOSED TO A NUCLEAR BURST, THE SUPPRESSION OF THE LARGE NUMBER OF FIRES WHICH WILL OCCUR MUST NECESSARILY INCLUDE EFFORTS OF UNTRAINED PERSONNEL (SELF-HELP), AND TRAINED CIVILIAN BRIGADES IN ADDITION TO PUBLIC-FIRE DEPARTMENTS. THE EFFECTIVENESS OF PERSONNEL AND THE AMOUNT OF WATER REQUIRED TO SUPPRESS FIRES ON THE LEVEL OF SELFHELP AND BRIGADES WERE DETERMINED FROM EXPERIMENTS PERFORMED IN THE LABORATORY AND IN ACTUAL STRUCTURES. FIRE DEPARTMENT OPERATIONS WERE ANALYZED USING DATA GATHERED ON CERTAIN SELECTED ACTUAL BUILDING FIRES IN THE GREATER CHICAGO METROPOLITAN AREA, IT WAS FOUND THAT PUBLIC FIRE DEPARTMENTS ARE PRESENTLY USING MUCH LARGER QUANTITIES OF WATER TO CONTROL DWELLING FIRES THAN THAT REQUIRED IN THE EXPERIMENTAL STUDIES, IN GENERAL, RURAL AND SMALL URBAN FIRE DEPARTMENTS WERE FOUND TO BE USING CONSIDERABLY LESS WATER THAN LARGE URBAN AREA FIRE DEPARTMENTS, DUE PARTLY TO INHERENT LIMITATIONS IN AVAILABLE EQUIPMENT AND WATER SUPPLIES, CRITERIA ARE GIVEN FOR THE NUMBER OF SELF-HELP AND BRIGADE TEAMS REQUIRED TO SUPPRESS A GIVEN NUMBER OF FIRES INITIATED BY THE THERMAL PULSE, VARIOUS ASPECTS OF FIRE DEPARTMENT OPERATIONAL NEEDS DURING A NUCLEAR EMERGENCY ARE DISCUSSED, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-602 124 DIV. 29/1
(TIST6/00)
IIT RESEARCH INST., CHICAGO, ILL.
SHELTER EQUIPMENT PLANNING GUIDELINES, (U)
FINAL REPT.,
F
JUNE 64 414 P.
OCD OS62 195 ,PROJ.
UNCLASSIFIED REPORT

HC $6.00
MF $2.00

DESCRIPTORS: (*SHELTERS, SURVIVAL), RADIOACTIVE FALLOUT, SURVIVAL KITS, ELECTRIC POWER PRODUCTION, POWER SUPPLIES, AIR CONDITIONING EQUIPMENT, VENTILATION, WATER SUPPLIES, WASTES (SANITARY ENGINEERING), CLOSED ECOLOGICAL SYSTEMS, DISPOSAL, COMMUNICATION SYSTEMS, FIRE SAFETY, NOISE, FOOD, MEDICINE, RADIATION MONITORS, DOSIMETERS (U)

THE OBJECTIVE OF THE STUDY IS TO ESTABLISH A SERIES OF GUIDELINES FOR COMMUNITY SHELTER EQUIPMENT AND SUPPLY PLANNING. SPECIFICALLY, THE STUDY WAS DESIGNED TO DETERMINE THE TYPE OF EQUIPMENT AND SUPPLIES WHICH ARE NECESSARY FOR HUMAN SURVIVAL WITHIN THE PROTECTIVE AREA OF A COMMUNITY FALLOUT SHELTER AND THE MANNER IN WHICH THE EQUIPMENT AND SUPPLIES SHOULD BE MAINTAINED BEFORE AND DURING SHELTER OCCUPANCY. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-607 978 DIV. 10/1 1/1 4/1 13/1
(TIST3/00)
MSA RESEARCH CORP., CALLERY, PA.
EXTINGUISHMENT OF ALKALI METAL FIRES. (M)
REPT. FOR FEB 62-JUL 64.
RODGERS,S. J. ;EVERSON,W. A. ; HC $3.00
OCT. 64 100 P. MF $0.75
AF33 657 8310 8119 811832
APL , TDR64 114
UNCLASSIFIED REPORT

DESCRIPTORS: (*ALKALI METALS, FIRES), (*SPACECRAFT, FIRES), LITHIUM, SODIUM, POTASSIUM, RUBIDIUM, CESIUM, HELIUM GROUP GASES, OXYGEN, LIQUIDS, ORGANIC COMPOUNDS, SALTS, AIRCRAFT FIRES, FIRE EXTINGUISHERS, ISOCYANATE PLASTICS (U)

THE EFFECTS OF INERT GAS BLANKETING AND OXYGEN PARTIAL PRESSURE WERE EVALUATED. IT WAS FOUND THAT REDUCTION OF OXYGEN PARTIAL PRESSURE WAS EFFECTIVE IN INHIBITING IGNITION AND DEGREE OF COMBUSION OF LITHIUM, SODIUM, NAK AND POTASSIUM. RUBIDIUM AND CESIUM DID NOT IGNITE, I.E., THERE WAS NO EMISSION OF SMOKE OR FLAME. REDUCED OXYGEN PARTIAL PRESSURE WAS ALSO EFFECTIVE IN INHIBITING IGNITION OF ALKALI METAL JET STREAMS. A NUMBER OF DIFFERENT SALTS, ORGANIC LIQUIDS, AND POLYURETHANE FOAM WERE EVALUATED WITH RESPECT TO ALKALI METAL FIRE EXTINGUISHMENT. MET-LX AND TEC POWDER WERE THE MOST EFFECTIVE SALTS WHICH WERE EVALUATED. THE RATIO OF TEC POWDER/ALKALI METAL WAS 0.4 FOR 100 LB SODIUM FIRES AND 0.2 FOR 500 LB SODIUM FIRES. POLYURETHANE FOAM WAS FOUND TO BE EFFECTIVE ON LOW TEMPERATURE (1000F) FIRES AND WAS USEFUL ON ALKALI METAL FIRES ON OR UNDER INSULATION. ORGANIC LIQUIDS WERE NOT PARTICULARLY EFFECTIVE ON ALKALI METAL FIRES. A SECTION IS PRESENTED ON A TYPICAL ALKALI METAL SYSTEM WHICH MIGHT BE USED TO GENERATE ELECTRICAL POWER IN SPACE. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-610 674 DIV. 14/1 4/1
(TIST1/00)
MONSANTO RESEARCH CORP., DAYTON, OHIO.
DEVELOPMENT OF FIRE-RESISTANT WATER BASE HYDRAULIC
FLUID. (M)
BIMONTHLY REPT. NO. 5, 1 DEC 64-31 JAN
65,
5
BLAKE,E. S. ;DEEBEL,G. F. ;RICHARDSON,-
G. A. ;
JAN. 65 16 P.
N0BS90270

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

SEE ALSO AD-608 647.

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY)), ADDITIVES, PHOSPHATES, ORGANIC PHOSPHORUS COMPOUNDS, ETHYL CELLULOSE, FLAMMABILITY, IGNITION, VISCOSITY, COMPATIBILITY, PAINTS, CORROSION, ALUMINUM
(U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE ALKALI ALKYL PHOSPHATES CONTINUE TO AFFORD THE OPTIMUM PROPERTIES AS POUR POINT DEPRESSANT CANDIDATES. INTRODUCTION OF A PHENYL MOIETY INTO THE ETHYL GROUP RAISED THE AIT TO 900F. OF THE COMMERCIALLY AVAILABLE THICKENER'S TESTED, CELLOSIZE HYDROXYETHYL CELLULOSE (WP4400) AND WSR 205 WERE OF INTEREST AS THICKENERS. THE LOW PERCENTAGES SUGGEST THAT FROM A SHEAR STABILITY STANDPOINT THEY MAY BE SUSPECT. THE AIT OF PHOSPHATES APPEARS UNAFFECTED BY LARGE AMOUNTS OF WATER. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-608 647 DIV. 14/1 4/1 31/1
(TISTI/00)
MONSANTO RESEARCH CORP., DAYTON, OHIO.
DEVELOPMENT OF FIRE-RESISTANT WATER BASE HYDRAULIC
FLUID. (M)
BIMONTHLY REPT. NO. 4, 1 OCT-30 NOV 64,

4
BLAKE,E. S. ;DEEBEL,G. F. ;RICHARDSON,-
G. A. ;
NOV. 64 10 P.
NOBS90270

HC $1.00
MF $0.50

UNCLASSIFIED REPORT
SEE ALSO AD-606 340.

DESCRIPTORS: (*HYDRAULIC FLUIDS, FLAMMABILITY), SYNTHESIS (CHEMISTRY), PHOSPHATES, ORGANIC PHOSPHORUS COMPOUNDS, PAINT, COMPATIBILITY, SHIPBORNE, SOLUBILITY, IGNITION, EXPLOSIONS, HAZARDS (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE BROAD OBJECTIVE IS THE DEVELOPMENT OF A USABLE,-FIRE-RESISTANT, WATER-BASE HYDRAULIC FLUID FOR SHIPBOARD USE, IN WHICH THE NONAQUEOUS PHASE IS FIRE-RESISTANT. THE CONTRACT EFFORT IS RESTRICTED TO WATER SOLUTIONS AS CONTRASTED WITH EMULSIONS AND/OR SUSPENSIONS. FIRE RESISTANCE IN THE NONAQUEOUS PHASE IS IMPORTANT IN HYDRAULIC SYSTEMS OPERATING AT 5000 PSI, WHERE THE AQUEOUS PHASE IN CERTAIN SEGMENTS OF THE SYSTEM MAY, UNDER SPECIAL CIRCUMSTANCES, EVAPORATE, THEREBY LEAVING A HAZARDOUS EXPLOSIVE RESIDUE, AND WHERE SPRAY LEAKS DEVELOP THERE MAY BE FLAMMABLE RESIDUES EXPOSED TO IGNITION SOURCES. (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-606 340 DIV. 14/1 4/1
(TIST1/00)
MONSANTO RESEARCH CORP., DAYTON, OHIO.
DEVELOPMENT OF FIRE-RESISTANT WATER BASE HYDRAULIC
FLUID. (U)
BIMONTHLY REPT. NO. 3, 1 AUG-30 SEP 64.

3
BLAKE,E. S. ;DEEBEL,G. F. ;RICHARDSON,-
G. A. ; HC $1.00
SEPT. 64 3 P. MF $0.50
NOBS90270
UNCLASSIFIED REPORT
SEE ALSO AD-603 340.

DESCRIPTORS: (*HYDRAULIC FLUIDS, FLAMMABILITY), ORGANIC PHOSPHORUS COMPOUNDS, PHOSPHATES, ALKALI METAL COMPOUNDS, SYNTHESIS (CHEMISTRY), HALOGENS, FIRE SAFETY, IGNITION, LUBRICANTS, SOLUBILITY, STABILITY, WATER, SPECIFICATIONS, SHIPBORNE (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

SEVERAL UNSUCCESSFUL ATTEMPTS WERE MADE TO PREPARE ALKALI ALKYL PHOSPHATES CONTAINING STABILIZED HALOGEN FOR IMPROVED AUTOGENOUS IGNITION TEMPERATURE. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-603 340 DIV, 14/1
(TIST2/00)
MONSANTO RESEARCH CORP,, DAYTON, OHIO,
DEVELOPMENT OF FIRE-RESISTANT WATER BASE HYDRAULIC
FLUID, (U)
BIMONTHLY REPT, NO, 2, 1 JUN-31 JUL 64,

2
BLAKE,E, S, ;DEEBEL,G, F, ;RICHARDSON,-
G, A, ;
JULY 64 39 P,
NOBS90270

HC $2.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDRAULIC FLUIDS, FIRE SAFETY), (*FLAMMABILITY, HYDRAULIC FLUIDS), STABILITY, HYDROLYSIS, STORAGE, CORROSION INHIBITION, SEA WATER, PAINTS, STEEL, ALUMINUM, ELASTOMERS, PHOSPHATES, ALKALI METAL COMPOUNDS, PHOSPHORUS COMPOUNDS, SHIPS, COMPATIBILITY (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

THE ALKALI ALKYL PHOSPHATES AND ALKALI ALKYLPHOSPHONATES CONTINUE TO HOLD PROMISE AS CANDIDATES FOR FIRE-RESISTANT, POUR POINT DEPRESSANTS, THE FORMER APPEAR SOMEWHAT MORE COMPATIBLE WITH METALS, WHILE THE LATTER HAVE HIGHER AIT'S, PHOSPHORAMIDATES AND ALKALI ALKYL THIOLPHOSPHATES, IN GENERAL, ARE OF NO FURTHER INTEREST. (AUTHOR) (U)

AD-609 244 DIV. 14/1 4/1 31/1
(TIST3/00)
MONSANTO RESEARCH CORP DAYTON OHIO
FIRE-RESISTANT HYDRAULIC FLUID FOR SUBMARINES.
(M)
FINAL REPT. FOR 1 OCT 63-1 DEC 64,
F
BLAKE,E. S. ;DEBRUNNER,R. E. ;WEBSTER,-
J. A. ;
DEC. 64 83 P.
NOBS90095

HC $3.00
MF $0.75

UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION HAS BEEN MADE FROM THE BEST AVAILABLE COPY.

DESCRIPTORS: (*HYDRAULIC FLUIDS, SUBMARINES), (*SUBMARINES, HYDRAULIC FLUIDS), (*FLAMMABILITY, HYDRAULIC FLUIDS), SYNTHESIS (CHEMISTRY), ESTERS, PHOSPHATES, PHOSPHORUS COMPUNDS, FLUID DYNAMIC PROPERTIES, MOLECULAR STRUCTURE, CHEMICAL PROPERTIES, VISCOSITY, FLUORINE COMPOUNDS, COMPATIBILITY, PAINTS, ELASTOMERS, SEALS (STOPPERS), ELECTRIC INSULATION, TESTS, TEST METHODS (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

SYNTHESIS AND EVALUATION DATA ON THREE CLASSES OF PHOSPHORUS ESTERS AS POSSIBLE BASE STOCKS FOR FIRE-RESISTANT HYDRAULIC FLUIDS FOR SUBMARINES ARE REPORTED. THE CLASSES ARE: PHOSPHATES, PHOSPHINATES, AND PHOSPHORAMIDATES. THEY WERE EVALUATED FOR FIRE RESISTANCE (AIT, 1300. MOLTEN METAL TEST, FLASH AND FIRE POINTS); FLUID PROPERTIES (VISCOSITIES, ASTM SLOPES, POUR POINTS); AND COMPATIBILITY WITH PAINT, RING SEALS, AND ELECTRICAL CONDUIT SHEATHING PRESENTLY USED IN SUBMARINES. DETAILED STRUCTURE/PROPERTY CORRELATIONS ARE PRESENTED FOR THE THREE CLASSES. FLUORINE-CONTAINING PHOSPHORAMIDATES HAVE BEEN SYNTHESIZED THAT POSSESS BETTER ASTM SLOPES AND FAR SUPERIOR PAINT AND ELASTOMER COMPATIBILITY THAN MIL-H-19457, WHILE RETAINING FIRE RESISTANCE COMPARABLE TO MIL-H-19457. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-603 268 DIV. 14/1
(TIST1/00)
MONSANTO RESEARCH CORP., DAYTON, OHIO.
FIRE RESISTANT HYDRAULIC FLUID FOR SUBMARINES.
(U)
BIMONTHLY REPT. NO. 5, 1 JUN-31 JUL 64,

5
BLAKE,E. S. ;DEBRUNNER,R. E. ;WEBSTER,-
J. A. ;
JULY 64 17 P.
NOBS90095

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDRAULIC FLUIDS, SUBMARINES), (*FIRE SAFETY, HYDRAULIC FLUIDS), PHOSPHOROUS COMPOUNDS, CHLORINE COMPOUNDS, ESTERS, STABILITY, HYDROLYSIS, PAINTS, ELASTOMERS, VISCOSITY, PHYSICAL PROPERTIES, EXPERIMENTAL DATA (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS (U)

WORK CONTINUED ON FLUORINE-CONTAINING PHOSPHORAMIDATES WITH EMPHASIS ON STRUCTURAL MODIFICATIONS TO IMPROVE FLUID PROPERTIES AND FIRE RESISTANCE. SEVERAL COMPOUNDS WERE PREPARED WHICH EXHIBIT OUTSTANDING QUALITIES IN THE PAINT AND BUNA N COMPATIBILITY TESTS, AND ALSO SHOW SATISFACTORY HYDROLYTIC STABILITY AS MEASURED BY THE MIL-SPEC 19457A 'COKE' BOTTLE TEST. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-607 279 DIV. 25/1 30/1
(TIST3/00)
NATIONAL BUREAU OF STANDARDS, WASHINGTON, D. C.
A LOW SPEED WIND TUNNEL FOR MEASURING THE EFFECT
OF WIND ON BUOYANT DIFFUSION FLAMES. (U)
TECHNICAL REPT. NO. 1.
1
WELKER,J. R. ;SLIEPCEVICH,C. M. ;
SEPT. 64 13 P.
OCD 0562 69

HC $3.00
MF $0.75

UNCLASSIFIED REPORT
PREPARED BY OKLAHOMA UNIV. RESEARCH INST., NORMAN.

DESCRIPTORS: (*WIND TUNNELS, FLAME PROPAGATION), (*FLAME PROPAGATION, WIND TUNNELS), BUOYANCY, DIFFUSION, FLAMES, FIRES, COMBUSTION, LIQUIDS, FUELS, THERMODYNAMICS, TEST METHODS, TEST FACILITIES (U)

THE PURPOSE OF THE EQUIPMENT DESCRIBED IN THIS PAPER IS TO PROVIDE THE ENVIRONMENT NECESSARY TO STUDY THE BEHAVIOR OF FLAMES FROM LIQUID POOLS UNDER THE INFLUENCE OF WIND. THE EQUIPMENT INCLUDES A WIND TUNNEL WITH SUPPORTING BLOWER, APPROPRIATE CALMING SECTION, AND OBSERVATION AND CONTROL ROOM; THE BURNER TRAYS; AND A FUEL DELIVERY SYSTEM. THE DESIGN OF THE TUNNEL AND EQUIPMENT IS BASED ON INFORMATION AVAILABLE IN THE LITERATURE. A SHORT THEORETICAL DISCUSSION IS GIVEN AND SOME DATA FROM THE LITERATURE ARE USED TO SUPPORT A SLIGHT MODIFICATION OF A PREVIOUS METHOD OF FLAME REPRESENTATION. LITERATURE DATA ARE ALSO USED TO SHOW THE POSSIBILITY OF CORRELATING THE EXPECTED DATA IN A NEW WAY. THE RESULTS OF THIS NEW CORRELATION ARE DEPENDENT UPON WIND PROPERTIES ONLY, AND ARE INDEPENDENT OF FLAME PROPERTIES. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-607 388 DIV. 16/1
(TIST2/00)
NAVAL APPLIED SCIENCE LAB., BROOKLYN, N. Y.
BURNS TO SKIN BY MILLISECOND LIGHT PULSES.
(U)
PROGRESS REPT. NO. 1,
1
DERKSEN,WILLARD L. ;BRACCIAVENTI,JOHN
;MIXTER,GEORGE ,JR.;
JULY 64 4 P.
NASL ,DASA 9400 12; ,1532
UNCLASSIFIED REPORT

HC $2.00
MF $0.50

DESCRIPTORS: (*BURNS, THERMAL RADIATION), (*THERMAL RADIATION, BURNS), (*NUCLEAR EXPLOSIONS, BURNS), SIMULATION, RATS, MEDICAL RESEARCH, TEST METHODS, FLASH LAMPS (U)

THE RADIANT ENERGY REQUIRED TO PRODUCE SKIN BURNS FOR THERMAL RADIATION EXPOSURES WITH DURATIONS LESS THAN 100 MILLISECONDS HAS NEVER BEEN MEASURED. TO DETERMINE VALUES FOR DURATIONS IN THE ORDER OF MILLISECONDS, BURNS WERE PRODUCED ON THE DEPILATED SKIN OF ALBINO RATS BY EXPOSURE TO THE IRRADIANCE FROM A XENON FLASH LAMP ENERGIZED WITH 14,000 JOULES. THE INTENSITY OF THE RADIANT PULSE PEAKED IN 0.4 MILLISECOND AND DECAYED TO ONE-HALF THE PEAK VALUE IN 5 MILLISECOND. THE THRESHOLD BURN - A LESION EXHIBITING A SCAB - OCCURRED IN ONE-HALF OF THE EXPOSURES AT A DISTANCE FROM THE LAMP AT WHICH THE RADIANT EXPOSURE WAS 3.5 CAL/SQ CM. MINOR LESIONS OF SHORT DURATION OCCURRED AT 2 CAL/SQ CM. IN GENERAL THE SCABS APPEARED THINNER THAN THOSE WHICH DEVELOP AS A RESULT OF EXPOSURES OF LONGER DURATION. TO STUDY THE EFFECT OF PIGMENTATION AND TO PROVIDE DATA WHICH WOULD BE MORE AMENABLE TO MATHEMATICAL ANALYSIS, ANOTHER EXPERIMENT WAS RUN WITH THE SKIN MADE OPAQUE WITH A THIN BLACK FILM. FOR THE OPAQUE SITUATION THE TEMPERATURE PROFILE HISTORY CAN BE DETERMINED WITH GREATER CERTAINTY, SINCE THE ENERGY- IS ABSORBED ONLY AT THE SURFACE AND NOT IN DEPTH IN THE SKIN AS IN THE CASE OF THE UNCOVERED SITUATION. FOR THE BLACKENED SKIN, A RADIANT EXPOSURE OF ONLY 0.35 CAL/SQ CM PRODUCED SCAB LESIONS IN ONE-HALF OF THE EXPOSURES AND MINOR BURNS OCCURRED AT 0.2 CAL/SQ CM. THE COURSE OF THE BURN RECOVERY WAS STUDIED PICTORIALLY. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO.010009

AD-612 148 DIV. 13/1 30/1
(TISTI/00)
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF
PERMANENT SOUTH POLE STATION, DESIGN LIMITATIONS
AND CONCEPTS,   (U)
PRELIMINARY REPT.,
SCHROEDER, JAMES E. ;
JAN. 61   17 P.
N-397 Y F015 11 103

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*LABORATORIES, POLAR REGIONS), (*POLAR REGIONS, LABORATORIES), CONSTRUCTION, STRUCTURES, BUILDINGS, MATERIALS, DESIGN, WATER SUPPLIES, SANITARY ENGINEERING, FIRE SAFETY, FUELS, POWER EQUIPMENT, AIR CONDITIONING EQUIPMENT, TABLES   (U)
IDENTIFIERS: ANTARCTIC REGIONS   (U)

A PRELIMINARY REVIEW IS PRESENTED OF THE CONSTRUCTION LIMITS AFFECTING THE FINAL DESIGN OF A PERMANENT 25-MAN STATION AT THE SOUTH POLE AND THE EVALUATION OF 12 POSSIBLE DESIGN CONCEPTS. THE THREE PRINCIPAL LIMITS SELECTED AS THOSE WHICH WILL HAVE THE GREATEST EFFECT ON THE FINAL DESIGN OF THE STATION ARE (1) LOGISTICAL REQUIREMENTS, (2) CONSTRUCTION SEASON AND (3) CONSTRUCTION FORCE. FOR VALUATION OF DESIGN CONCEPTS THREE STATION TYPES-BELOW GRADE, AT GRADE AND ABOVE GRADE, AND FOUR STATION LAYOUTSTRAIN, SEMI-TRAIN, DISPERSED AND COMPOSITE, WERE CONSIDERED. THESE 12 COMBINATIONS WERE EVALUATED AGAINST TEN STATION ELEMENTS-MISSION AND OPERATION, CONSTRUCTION EFFORT, SPACE UTILIZATION, STRUCTURES, WATER SUPPLY, SANITATION, AIR CONDITIONING, FIRE PROTECTION, FUEL AND SUPPLY HANDLING, AND POWER GENERATION AND DISTRIBUTION. TABLES DELINEATING THE ADVANTAGES AND DISADVANTAGES INTRODUCED BY EACH ELEMENT FOR EACH CONCEPT ARE GIVEN. (AUTHOR)   (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-604 426 DIV. 10/1 4/1 31/1
(TISTO/75)
NAVAL RESEARCH LAB., WASHINGTON, D. C.
THE IGNITION AND COMBUSTION PROPERTIES OF ACTIVATED
CARBON CONTAINING ADSORBED HYDROCARBONS, (U)
INTERIM REPT.,
WOODS,F. J. ;JOHNSON,J. E. ; HC $0.75
JULY 64 32 P. MF $0.50
NRL , 6090
UNCLASSIFIED REPORT

DESCRIPTORS: (*SUBMARINES, FIRE SAFETY), (*CARBON, FLAMMABILITY), (*HYDROCARBONS, COMBUSTION), AIR, PURIFICATION, VENTILATION, FILTERS (FLUID), IMPURITIES, VAPORS, ADSORPTION, OXIDATION, IGNITION, CARBON DIOXIDE, CARBON COMPOUNDS, MONOXIDES (U)
IDENTIFIERS: ACTIVATED CARBON, AIR PURIFICATION SYSTEMS, CARBON MONOXIDE (U)

ACTIVATED CARBON CONTAINED IN LARGE FILTER BEDS IS USED IN NUCLEAR SUBMARINES FOR REMOVAL OF ODORS AND TRACE CONTAMINANTS, BECAUSE ORGANIC VAPORS ARE CONCENTRATED IN THIS WAY IN THE CARBON, A STUDY WAS MADE TO GET INFORMATION FOR ASSESSING THE FIRE HAZARDS INVOLVED IN MAINTAINING THE CARBON FILTER IN THE VENTILATION SYSTEM OF THE SUBMARINES. IN THIS STUDY, SPONTANEOUS IGNITION OF SUBMARINE-EXPOSED CARBONS OCCURRED AT TEMPERATURES AS LOW AS 490F IN AIR AT ONE ATMOSPHERE. EXOTHERMIC OXIDATIVE REACTIONS OCCURRED IN A FLOW SYSTEM AT TEMPERATURES AS LOW AS 390F. COMBUSTION OF CARBONS CONTAINING HYDROCARBON PRODUCED CONSIDERABLE QUANTITIES OF CARBON DIOXIDE AND CARBON MONOXIDE, AND SIGNIFICANT AMOUNTS OF THESE GASES WERE EVOLVED EVEN UNDER PRECOMBUSTION CONDITIONS. OF A NUMBER OF CARBONS WHICH HAD BEEN USED IN SUBMARINES, THE LOWEST FLASH POINT FOUND WAS 160F. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-601 529 DIV, 13/1
(TISTO/50)
NAVAL RESEARCH LAB,, WASHINGTON, D, C,
AN IMPROVED VACUM PNEUMATIC SYSTEM FOR FILLING LARGE
DRY CHEMICAL FIRE EXTINGUISHERS, (U)
PETERSON,H, B, ;GIPE,R, L, ;TUVE,R,
L, ;PORTER,J, W, ;
APR, 64 16 P,
NRL 6076

HC $0.50
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRE EXTINGUISHERS, MAINTENANCE), CHEMICALS, PNEUMATIC SYSTEMS, POWDERS, VACUUM CLEANERS, CENTRIFUGES, SEPARATION, GAS FILTERS, MAINTENANCE EQUIPMENT, VACUUM APPARATUS (U)

AN IMPROVED VACUUM PNEUMATIC CONVEYING SYSTEM HAS BEEN DEVELOPED FOR FILLING DRY CHEMICAL FIRE EXTINGUISHERS OF 150 LB AND LARGER CAPACITY, IT FEATURES MORE RAPID FILLING AND ELIMINATES THE LIFTING AND DUMPING OF CANS, WITH ITS ATTENDANT DUST NUISANCE, THE MAIN COMPONENTS ARE A 1-1/2-HORSEPOWER INDUSTRIAL TYPE VACUUM CLEANER AND AN ESPECIALLY DESIGNED SEPARATOR CAP WHICH FITS ON THE FILL-CAP THREADS AND SERVES TO SEPARATE THE POWDER FROM THE CONVEYING AIR STREAM, THREE DIFFERENT SEPARATOR CAPS HAVE BEEN DESIGNED FOR THREE LARGE EXTINGUISHER TYPES PRESENTLY USED AT MILITARY ACTIVITIES, DESIGN VARIATIONS ARE NECESSARY IN ORDER TO ACHIEVE THE PROPER BALANCE BETWEEN POWDER-TRANSFER RATE TO THE EXTINGUISHER AND CARRYOVER OF POWDER TO THE VACUUM CLEANER, WHICH VARIES ACCORDING TO THE DIFFERING GEOMETRIES OF THE EXTINGUISHER SHELLS, A POWDER-TRANSFER RATE OF 0,40 POUND PER SECOND WAS MAINTAINED DURING THE FILL CYCLE, AND THE AMOUNT OF CARRYOVER RECLAIMED IN THE VACUUM-CLEANER BAG WAS 2,0 PERCENT OR LESS, IN USING THIS SYSTEM, THE POWDER IS DRAWN DIRECTLY FROM THE SHIPPING CANS ON THE GROUND, ELEVATED, AND PLACED INTO THE EXTINGUISHER WITH LITTLE EFFORT, THE LACK OF DUSTING DURING THE OPERATION MAKES IT POSSIBLE TO CHARGE THESE EXTINGUISHERS INDOORS, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-612 064 DIV. 14/1 4/1
(TIST1/00)
NAVAL RESEARCH LAB WASHINGTON D C
STABILIZATION OF SILICONE LUBRICATING FLUIDS AT
300 TO 400C BY SOLUBLE CERIUM COMPLEXES. (U)
INTERIM REPT.,
BAKER,H. R. ;O'REAR,J. G. ;SNIEGOSKI,P.
J. ;KAGARISE,R. E. ;
JAN. 65 23 P.
NRL-6156
RR007 08 44 5500 ,RR001 01 43 4752
UNCLASSIFIED REPORT

HC $1.00
MF $0.50

DESCRIPTORS: (*SILOXANES, STABILIZATION), (*LUBRICANT ADDITIVES, CERIUM COMPOUNDS), (*CERIUM COMPOUNDS, LUBRICANT ADDITIVES), (*ANTIOXIDANTS, LUBRICANT ADDITIVES), COMPLEX COMPOUNDS, HYDRIDES, LUBRICANTS, SPECTRA (INFRARED), HEAT-RESISTANT MATERIALS, STORAGE, MOLECULAR PROPERTIES (U)
IDENTIFIERS: CEROUS ACETYLACETONATE, METHYL HYDROGEN SILICONES, SILICONES (U)

THE SI-H BOND WAS SHOWN TO BE INVOLVED IN THE FORMATION OF A STABLE CERIUM-SILICONE INHIBITOR SYSTEM AND THIS DISCOVERY WAS APPLIED TO THE DEVELOPMENT OF IMPROVED METHODS FOR STABILIZING SILICONES. THE INHIBITORY PROCESS USES INITIAL REACTIONS BETWEEN HYDROUS CEROUS ACETYLACETONATE AND A POLYMETHYLHYDROGEN SILICONE, THESE REACTIONS PROCEED AND TERMINATE IN AERATED REFLUXING BENZENE TO PROVIDE A SILICONE-SOLUBLE ADDUCT. THE CHEMISTRY OF THE HYDRIDE GROUP WAS FOLLOWED QUANTITATIVELY AND SOME FEATURES OF STRUCTURE ARE POSTULATED FOR THE ADDUCT. THE SIMPLIFIED INHIBITORY PROCESS IS A TWO-STEP REACTION, STABILIZATION IS COMPLETED BY AERATING A MIXTURE OF THE CERIUM ADDUCT AND A SILICONE OIL FOR ONE HOUR AT 270 TO 280C. THERE IS AN OPTIMUM CONCENTRATION OF CERIUM ADDUCT FOR THE STABILIZATION OF LIGHTLY PHENYLATED DIMETHYL SILICONES, THE SAME CONCENTRATION ACHIEVES 100 TO 500 PERCENT IMPROVEMENTS IN THE 300C STABILITY OF DIMETHYL SILICONES AND THEIR CHLOROPHENYL- AND PHENYL-SUBSTITUTED TYPES; WITH MORE HIGHLY PHENYL-SUBSTITUTED SILICONES, STABILIZATION TEMPERATURES ARE RAISED TO 400C AND RELATIVE IMPROVEMENT FACTORS ROUGHLY PARALLEL THOSE OBSERVED AT 300C. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-606 045 DIV, 10/1 30/1
(TIST3/00)
OKLAHOMA UNIV, RESEARCH INST,, NORMAN,
A LOW SPEED WIND TUNNEL FOR MEASURING THE EFFECT
OF WIND ON BUOYANT DIFFUSION FLAMES, (U)

WELKER,J, REED ;SLIEPCEVICH,C, M, ;
SEPT, 64 1 P, HC $3.00
OURI-TM-1454-4-1 MF $0.50
DA18 035AMC116A 1454
UNCLASSIFIED REPORT

DESCRIPTORS: (*FLAME PROPAGATION, WIND), (*WIND TUNNELS, FLAMES), FUEL CONSUMPTION, DYNAMICS, DIFFUSION, COMBUSTION, HEAT TRANSFER, DRAG (U)

THE PURPOSE OF THE EQUIPMENT DESCRIBED IN THIS PAPER IS TO PROVIDE THE ENVIRONMENT NECESSARY TO STUDY THE BEHAVIOR OF FLAMES FROM LIQUID POOLS UNDER THE INFLUENCE OF WIND, THE EQUIPMENT INCLUDES A WIND TUNNEL WITH SUPPORTING BLOWER, APPROPRIATE CALMING SECTION, AND OBSERVATION AND CONTROL ROOM; THE BURNER TRAYS; AND A FUEL DELIVERY SYSTEM, THE DESIGN OF THE TUNNEL AND EQUIPMENT IS BASED ON INFORMATION AVAILABLE IN THE LITERATURE, (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-611 879 DIV. 14/1 4/1
(TIST2/00)
OLIN MATHIESON CHEMICAL CORP NEW HAVEN CONN
DEVELOPMENT OF A FIRE-RESISTANT WATER-BASE HYDRAULIC
FLUID. (U)
BIMONTHLY PROGRESS REPT. NO. 5, 1 JAN-
28 FEB 65,
5
KOBER,E. H. ;LEDERLE,H. F. ;OTTMANN,G.
F. ; HC $2.00
MAR. 65 27 P. MF $0.50
NOBS90268
UNCLASSIFIED REPORT
SEE ALSO AD-609 952.

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY)), AMINES, PHENOLS, VISCOSITY, IGNITION, CRYSTALLIZATION, SEA WATER, COMPATIBILITY, PERFORMANCE (ENGINEERING), FLAMMABILITY (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS, DIPHENYL PHENYLENE DIAMINES, ANILINOPHENOLS, PHENYL ETHERS
(U)

TWO NEW BASE STOCKS WERE PREPARED BY ALKOXYLATION OF N, N'-DIPHENYL P-PHENYLENE DIAMINE AND P-ANILINOPHENOL. THESE, AS WELL AS THE PREVIOUSLY REPORTED BASE STOCKS, REQUIRED VISCOSITY INDEX IMPROVERS AND POUR POINT DEPRESSANTS IN ORDER TO MEET THE 25F VISCOSITY MAXIMUM OF 850 CS AND THE POUR POINT MAXIMUM OF OF. FOUR FORMULATIONS HAVING THE BEST OVERALL PROPERTIES WERE SELECTED FOR FINAL FORMULATION AND EVALUATIONS. THE REPRODUCIBILITY OF BASE STOCK PREPARATION WAS INVESTIGATED AND, WITH ONE EXCEPTION, WAS FOUND TO BE SATISFACTORY. (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-609 952 DIV. 14/1 4/1
(TIST1/00)
OLIN MATHIESON CHEMICAL CORP., NEW HAVEN, CONN.
DEVELOPMENT OF A FIRE-RESISTANT WATER-BASE HYDRAULIC FLUID. (M)
BIMONTHLY PROGRESS REPT. NO. 4, 1 NOV - 31 DEC 64.
4
KOBER,E. H. ;OTTMANN,G. F. ;
JAN. 65 23 P.
NOBS90268
HC $1.00
MF $0.50
UNCLASSIFIED REPORT
SEE ALSO AD-607 948.

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY-)), PHENOLS, CHLORINE COMPOUNDS, ETHYLENE OXIDE, NHETEROCYCLIC COMPOUNDS, AMINES, ALCOHOLS, FLAMMABILITY, FLAMES, VISCOSITY, IGNITION, TEMPERATURE, SOLUBILITY (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS, TOLUYLENE DIAMINES, PHENYL ETHERS, GLYCIDOL (U)

ALKOXYLATION STUDIES OF 2, 4-TOLUYLENE DIAMINE, HYDROXY DIPHENYL OXIDE, OXYDIANILINE, 4, 4'-METHYLENE BIS 2CHLOROANILINE, BIS PHENOL A, AND N, N'-DIPHENYL P-PHENYLENE DIAMINE WITH ETHYLENE OXIDE AND GLYCIDOL IN DIFFERENT MOLE RATIOS WERE COMPLETED. AS A RESULT, COMPOSITIONS OF THOSE ALKOXYLATION PRODUCTS WHICH PROVIDE FOR THE LOWEST POSSIBLE VISCOSITIES OF THEIR AQUEOUS SOLUTIONS AT 25F WITHOUT DETRIMENTALLY AFFECTING OTHER PROPERTIES SUCH AS AUTOGENOUS IGNITION TEMPERATURE, POUR POINT, FLASH AND FIRE POINTS WERE ESTABLISHED. STUDIES ON THE FORMULATION OF SIX SELECTED FLUID BASE STOCKS WERE INITIATED. A FLUID COMPOSED OF ALKOXYLATED HYDROXY DIPHENYL OXIDE AS BASE STOCK, UCON 90,000 AS VISCOSITY INDEX IMPROVER, AND WATER MET THE SPECIFICATIONS FOR VISCOSITY, POUR POINT, AUTOGENOUS IGNITION TEMPERATURE, FLASH AND FIRE POINTS. (AUTHOR) (U)

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DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010007

AD-605 299 DIV. 14/1 4/1
(TIST2/00)
OLIN MATHIESON CHEMICAL CORP., NEW HAVEN, CONN.
DEVELOPMENT OF A FIRE-RESISTANT WATER-BASE HYDRAULIC FLUID. (U)
BIMONTHLY PROGRESS REPT. NO. 2, 1 JUL-31 AUG 64,
2
OTTMANN,G. F. ;
0 8 P.
HC $2.00
MF $0.50
NOBS90268
UNCLASSIFIED REPORT
SEE ALSO AD-602 133.

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY)), AMINES, PHENOLS, ALCOHOLS, HALOGENS, ETHYLENE OXIDE, PROPANOLS, FLAMMABILITY, IGNITION, VISCOSITY-
(U)
IDENTIFIERS: GLYCIDOL, METHYLENE DIANILINES, PHENYL ETHERS, PROPYLENE OXIDE, TOLUYLENE DIAMINES, FIRE-RESISTANT MATERIALS (U)

THE ALKOXYLATION OF 2,4-TOLUYLENE DIAMINE, POLYHALOGENATED PHENOLS, AND POLYFLUORO ALCOHOLS WITH ALKYLENE OXIDES SUCH AS ETHYLENE OXIDE, PROPYLENE OXIDE, AND GLYCIDOL WAS STUDIED. THE MAJORITY OF THE REACTION PRODUCTS WAS WATER-SOLUBLE, MET THE SPECIFICATIONS FOR FLASH POINTS AND FLAME POINTS BUT FAILED TO PASS THE AUTOGENOUS IGNITION TEST. ALKOXYLATION OF METHYLENE DIANILINES, METHYLENE DIPHENOLS, P,P'-DIPHENOL, HYDROXYMETHYL DIPHENYLOXIDES, AND HYDROXYDIPHENYL OXIDES WITH ETHYLENE OXIDE AND/OR GLYCIDOL GAVE A VARIETY OF WATERSOLUBLE PRODUCTS WHICH MET THE SPECIFICATIONS FOR FLASH POINT, FLAME POINT, AND AUTOGENOUS IGNITION TEMPERATURE. NONE OF THE ALKOXYLATED PRODUCTS MET THE VISCOSITY SPECIFICATION OF 850 CS OR BELOW AT 25F AFTER BEING ADJUSTED TO 28 = 3 CS AT 150F BY ADDITION OF WATER. (AUTHOR)
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-602 133 DIV, 14/1 4/1
(TISTO/50)
OLIN MATHIESON CHEMICAL CORP, NEW HAVEN, CONN,
DEVELOPMENT OF A FIRE-RESISTANT WATER-BASE HYDRAULIC
FLUID, (U)
BIMONTHLY PROGRESS REPT, NO, 1, 11 MAY-
30 JUN 64,
1
KOBER,E, H, ;OTTMANN,G, F, ;
JULY 64 17 P,
NOBS90268

HC $0.50
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDRAULIC FLUIDS, SYNTHESIS (CHEMISTRY)), ETHYLENE OXIDE, AMINES, PHENOLS, TOLUENES, VISCOSITY, FIRE SAFETY, IGNITION, TEMPERATURE, SOLUBILITY (U)
IDENTIFIERS: FIRE-RESISTANT MATERIALS, GLYCIDOL, PROPYLENE OXIDE, TRICHLORO PHENOL, TOLUYLENE DIAMINES (U)

THE REACTION OF 2, 4-TOLUENE DIAMINE WITH BOTH ETHYLENE OXIDE AND GLYCIDOL IN VARIOUS MOLE RATIOS AFFORDED WATER-SOLUBLE PRODUCTS, WHEREAS THE PRODUCTS OBTAINED BY REACTING 2, 4-TOLUENE DIAMINE WITH PROPYLENE OXIDE WERE WATER-INSOLUBLE, WATER-SOLUBLE PRODUCTS WERE ALSO OBTAINED BY REACTING TRICHLOROPHENOL WITH GLYCIDOL IN DIFFERENT MOLE RATIOS, VISCOSITIES, POUR POINTS, FLASH AND FIRE POINTS, AND AUTOGENOUS IGNITION TEMPERATURES OF THE WATER-SOLUBLE PRODUCTS WERE DETERMINED, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO,010009

AD-610 711 DIV, 10/1 9/1 18/1 22/1
(TISTI/00)
PACIFIC SOUTHWEST FOREST AND RANGE EXPERIMENT STATION, BERKELEY, CALIF,
MASS FIRES AND FIRE BEHAVIOR, (M)
INTERIM REPT, NO, 1,
1
COUNTRYMAN,CLIVE M. ;   HC $1.00
64   7 P.   MF $0.50
OCS OS62 173 ,OCD PS64 32 2521E
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, WEAPONS), (*FUELS, COMBUSTION), DAMAGE, URBAN AREAS, NUCLEAR WEAPONS, HAZARDS, THERMAL RADIATION, FLAMES, AERODYNAMIC CHARACTERISTICS, POISONOUS GASES, GAS FLOW, TEMPERATURE, VORTICES, CONVECTION, INSTRUMENTATION, TESTS, TREES, TERRAIN, WIND, CIVIL DEFENSE SYSTEMS (U)

FIRE USED AS A MILITARY WEAPON DURING WORLD WAR II OFTEN CAUSED GREATER DAMAGE THAN THAT RESULTING FROM HIGH EXPLOSIVES. AND URBAN AND CITY FIRES CONTINUE TO CAUSE EXTENSIVE DAMAGE AND LARGE LOSS OF LIFE, THE DEVELOPMENT OF NUCLEAR WEAPONS HAS GREATLY INCREASED THE POTENTIAL OF FIRE AS A WEAPON, WITH SUBURBAN RESIDENTIAL AREAS SPREADING INTO WILDLAND AREAS AND BECOMING PART OF THE FUEL COMPLEX AND WITH THE BUILT-UPNESS OF CITIES INCREASING, MASS FIRE NOW POSES A MAJOR THREAT TO CIVILIAN POPULATIONS, PROPERTY, AND NATURAL RESOURCES, (AUTHOR)-
(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-603 139 DIV. 9/1 12/1 14/1 17/1
(TIST5/00)
POLYTECHNIC INST. OF BROOKLYN, N. Y.
AN ANNOTATED BIBLIOGRAPHY ON ABLATION AN RELATED
TOPICS, (U)

ISRAEL,MARTIN H. ;NARDO,S. V. ; HC $5.00
MAY 64 165 P. MF $1.00
686
NONR839 23 NR064 433
UNCLASSIFIED REPORT

DESCRIPTORS: (*ABLATION, BIBLIOGRAPHIES), (*BIBLIOGRAPHIES, ABLATION), HEAT TRANSFER, LAMINAR BOUNDARY LAYER, HIGH-TEMPERATURE RESEARCH, COOLING, MELTING, SUBLIMATION, VAPORIZATION, HEAT SHIELDS, ATMOSPHERE ENTRY, HEAT-RESISTANT MATERIALS, PLASTICS, METALS, HYPERSONIC FLOW, HEAT-RESISTANT PLASTICS, MATERIALS, POLYMERS, GRAPHITE, REENTRY VEHICLES, CERAMIC MATERIALS, ORGANIC MATERIALS, POROUS MATERIALS, COATINGS, REFRACTORY MATERIALS, QUARTZ, LAMINATED PLASTICS, GLASS TEXTILES, COMPOSITE MATERIALS, RUBBER, THERMAL INSULATION, SATELLITES (ARTIFICAL) (U)

THE BIBLIOGRAPHY CONTAINS 700 ENTRIES (551 ANNOTATED, 133 UNANNOTATED, AND 16 CLASSIFIED REFERENCES), LISTING RESEARCH PERTINENT TO THERMAL ENVIRONMENTS AND THE THERMAL PROTECTION OF STRUCTURES, PRIMARILY BY ABLATIVE TECHNIQUES. TOPICS INCLUDED DEAL WITH HIGH TEMPERATURE ENVIRONMENT, RE-ENTRY DYNAMICS AND THERMODYNAMICS, COOLING METHODS, ABLATION COOLING, AND MATERIALS FOR HIGH TEMPERATURE APPLICATION.- (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-606 456 DIV. 30/1
(TIST1/00)
RAND CORP., SANTA MONICA, CALILALIF.
A COMMENTARY ON FIRE RESEARCH, BASED ON THE MASS
FIRE STUDY GROUP CONFERENCE, THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES (MAY 26-28, 1957). (U)

DEHAVEN,JAMES C. ; HC $1.00
JULY 57 11 P. MF $0.50
P-1140RC

UNCLASSIFIED REPORT
LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY.

REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*FIRE SAFETY, SYMPOSIA), FIRES, CHEMICAL PROPERTIES, PHYSICAL PROPERTIES (U)

A COMMENTARY ON THE CONFERENCE SUGGESTING RESEARCH WHICH MIGHT USEFULLY BE UNDERTAKEN BASED ON THE DESCRIPTION AND DISCUSSION OF HOSTILE FIRES PRESENTED BY THE PRACTICAL FIRE FIGHTERS. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-612 197 DIV. 20/1
(TIST3/00)
RAND CORP SANTA MONICA CALIF
FIREBALL PHENOMENOLOGY, (U)
HC $3.00
BRODE, HAROLD L. ; MF $0.50
OCT. 64 51 P.
P-3026
UNCLASSIFIED REPORT

PREPARED FOR PRESENTATION AT THE TRIPARTITE TECHNICAL COOPERATION PANEL MEETING, PANEL N3, HELD AT THE JOINT FIRE SERVICE COLLEGE, DORKING, ENGLAND, 5-9 OCTOBER 1964.

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, PHYSICAL PROPERTIES), TEMPERATURE, DENSITY, THERMAL RADIATION, AIRBURST, EXPLOSION EFFECTS, SHOCK WAVES, GAMMA RAYS, X-RIIS, NEUTRONS, ENERGY, HIGH ALTITUDE, NUCLEAR WEAPONS, SCALE, MATHEMATICAL PREDICTION (U)

THE PAPER DEALS WITH SOME OF THE PROPERTIES OF NUCLEAR EXPLOSIONS WHICH INFLUENCE THE PREDICTIONS AND SCALINGS FOR FIREBALL PHENOMENA, NOTABLY FIREBALL SIZES, TEMPERATURES, DENSITIES, AND ULTIMATELY THE THERMAL RADIATION OUTPUT. ATTENTION IS FOCUSED ON THE INITIAL FEATURES OF FIREBALL FORMATION FOR WHICH IS EXAMINED THE SCALING WITH BOTH YIELD AND ALTITUDE OF BURST. FOR THE PRESENT, THESE SCALINGS ARE DERIVED FROM A FEW THEORETICAL CALCULATIONS WHICH DESCRIBE FIREBALL FEATURES FOR SEVERAL YIELDS AND ALTITUDES. (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-601 139 DIV. 20/1 13/1
(TIST2/00)
RAND CORP., SANTA MONICA, CALIF.
A REVIEW OF NUCLEAR EXPLOSION PHENOMENA PERTINENT
TO PROTECTIVE CONSTRUCTION, (U)
BRODE, H. L. ;
MAY 64 72 P.
HC $2.00
MF $0.75
R424PR
AF49 638 700

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, EXPLOSION EFFECTS), (*SHELTERS, NUCLEAR EXPLOSIONS); FIRES, NUCLEAR PARTICLES, THERMAL RADIATION, ELECTROMAGNETIC PULSES, CRATERING, NUCLEAR EXPLOSION DAMAGE; SHOCK (MECHANICS), BLAST, ATTENUATION (U)

SPECIFICALLY ORIENTED TO THE DESIGN OF PROTECTION FROM THE EFFECTS OF NUCLEAR WEAPONS; THE REPORT DEALS WITH THE PHENOMENA OF THE INTENSE OR CLOSE-IN REGIONS NOT ALWAYS ADEQUATELY COVERED IN SUCH OTHERWISE THOROUGH STANDARD WORKS AS GLASSTONE'S THE EFFECTS OF NUCLEAR WEAPONS. SOME FEATURES GIVEN EMPHASIS ARE EARLY FIREBALL GROWTH, PROMPT NUCLEAR RADIATION NEAR AN EXPLOSION, CRATERING AND INTENSE GROUND SHOCK, HIGH-OVERPRESSURE AIR BLAST, HOT FIREBALL AIR AND INTENSE THERMAL EXPOSURE, AND DISTRIBUTION OF DEBRIS AND AFTERWINDS.

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-611 772 DIV, 12/1 25/1
(TIST9/80)
RESEARCH AND ADVANCED DEVELOPMENT DIV AVCO CORP
WILMINGTON MASS
THERMAL PROTECTION SYSTEMS, APPLICATION RESEARCH
OF MATERIALS PROPERTIES AND STRUCTURAL CONCEPTS,
(U)
FINAL REPT, FOR 11 JUL 60-31 DEC 61,

F
HURWICZ,HENRYK ;MASCOLA,ROBERT ;
JAN, 65 677 P,
RAD-TR-62-14
AF33 616 7483 7381 738101
ML , TDR-64-82

HC $9.80
MF $3.00

UNCLASSIFIED REPORT

DESCRIPTORS: (*HEAT SHIELDS, REENTRY VEHICLES), (*REENTRY VEHICLES, HEAT SHIELDS), AERODYNAMIC HEATING, THERMAL INSULATION, COOLING, ABLATION, TRANSPORT PROPERTIES, SYSTEMS ENGINEERING, HEAT-RESISTANT MATERIALS, GUIDED MISSILE SIMULATORS, MODEL TESTS, TEST FACILITIES, CORRELATION TECHNIQUES, NUMERICAL ANALYSIS, PERFORMANCE (ENGINEERING), DESIGN, THERMAL PROPERTIES, STRUCTURES, MATHEMATICAL ANALYSIS, ENTHALPY, STAGNATION POINT, WEIGHT, HEAT TRANSFER, BOOST-GLIDE VEHICLES (U)

PERTINENT FACTORS AFFECTING THE FUNCTION OF THERMAL PROTECTION SYSTEMS ARE REVIEWED WITH EMPHASIS ON GLIDE RE-ENTRY APPLICATIONS, REVIEW IS MADE AND NEW INFORMATION IS GENERATED IN THE AREAS OF: (1) SYSTEM, MATERIAL, AND DESIGN PERFORMANCE CRITERIA NEEDED FOR EVALUATION, (2) METHODS AND TECHNIQUES NECESSARY FOR EXPERIMENTAL AND THEORETICAL ACQUISITION OF THE NECESSARY PARAMETERS, (3) CORRELATION OF DATA TO PRESENT INFORMATION FOR THE MATERIAL SELECTION AND DEVELOPMENT EFFORT, AND PROTECTION SYSTEM DESIGN USE, (4) DESIGN AND DEVELOPMENT TECHNIQUES FOR BUILT-UP SHIELD - STRUCTURE COMPONENTS (VEHICLE SIZING), AND (5) BASIC MECHANISMS OF HEAT AND MASS TRANSFER ASSOCIATED WITH THE MODE OF HEAT ABSORPTION OR DISSIPATION AND OF LOAD CARRYING AND TRANSMISSION CAPACITY, (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY   DDC SEARCH CONTROL NO,010009

AD-608 357 DIV, 14/1 1/1
(TIST2/00)
RESEARCH AND TECHNOLOGY DIV,, AIR FORCE SYSTEMS
COMMAND, WASHINGTON, D, C,
THERMAL STABILITY OF FLEXIBLE FIBROUS MATERIALS,
(M)

HC $2.00
MF $0.50

ROSS,JACK H, ;LITTLE,C, O, ;
OCT, 64   34 P, 7320   732002
RTD , TDR63 4031
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIBERS (SYNTHETIC), FIRE-RESISTANT TEXTILES), (*FIRE-RESISTANT TEXTILES, FIBERS (SYNTHETIC), ENVIRONMENTAL TESTS, HEAT TRANSFER, TEXTILES, PAPER, NYLON, DACRON, ASBESTOS, CARBON, THERMAL PROPERTIES, AIRCRAFT FIRES, FIRE SAFETY, SYNTHETIC RUBBER (U)

THE CONTINUING NEED FOR NEW THERMALLY STABLE FIBROUS MATERIALS FOR THE PROTECTION OF AIRCREW DECELERATORS PROMPTED AN INVESTIGATION TO DEVELOP A LABORATORY TECHNIQUE FOR SIMULATING THE HEAT AND AIR FLOW ENCOUNTERED IN AIRCRAFT FIRES, WITH THE DEVICE AVAILABLE, A NUMBER OF FIBROUS MATERIALS IN SINGLE AND MULTIPLE LAYERS WERE CHARACTERIZED FOR THERMAL STABILITY IN THE ENVIRONMENT SIMULATING THAT ENCOUNTERED DURING EMERGENCY ESCAPE FROM BURNING AIRCRAFT, THIS ENVIRONMENT INVOLVED EXPOSURE TO 1200 OR 1400F FOR 10 SECONDS AT AN AIR FLOW OF 225 FT/MIN, MATERIALS EVALUATED WERE PRIMARILY HT-1 IN VARIOUS WEAVES AND THICKNESSES, AS WELL AS AN HT-1 PAPER AND NYLON, DACRON, ASBESTOS, AND CARBON FABRICS, THE RESULTS INDICATED THAT A DOUBLE LAYER OF HT-1 FABRIC (7,25 OZS / SQ YD) WAS FOUND TO PROVIDE SUPERIOR RESISTANCE TO HEAT TRANSFER DURING THE 10-SECOND EXPOSURE, TRIPLE LAYER MATERIALS PROVIDED NO ADDITIONAL THERMAL PROTECTION BASED ON THE WEIGHT OF THE STRUCTURES EVALUATED, THESE DATA CONFIRMED PREVIOUS DATA OBTAINED FROM SIMULATED FIRE TESTS CARRIED OUT WITH COMPLETE PERSONNEL DECELERATOR SYSTEMS, FABRICATION OF 75 PERSONNEL DECELERATOR HARNESSES AND PACKS IS BEING CARRIED OUT TO PROVIDE A MORE EXTENSIVE EVALUATION OF HT-1 MATERIAL, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-607 131 DIV. 10/1 12/1 22/1
(TIST4/00)
ROCKET PROPULSION LAB., AIR FORCE SYSTEMS COMMAND,
EDWARDS, CALIF.
SPACE VEHICLE PROPULSION COMPARTMENT FIRE HAZARD
INVESTIGATION, VOLUME 1, (U)

HC $4.00
MF $1.00

MARTINKOVIC,PAUL J. ;
JULY 64 76 P. 6753 675303
RPL , TDR64 103
UNCLASSIFIED REPORT
A PORTION OF THE ORIGINAL DOCUMENT CONTAINS FINE DETAIL
WHICH MAY MAKE READING OF PHOTOCOPY DIFFICULT.

DESCRIPTORS: (*ROCKET PROPELLANTS, FIRES), (*FIRE SAFETY, SPACECRAFT), HAZARDS, FUELS, OXIDIZERS, LUBRICANTS, OILS, GREASES, HYDRAULIC FLUIDS, HYDRAZINE, DIMETHYL HYDRAZINE (1-1), COMBUSTION (U)
IDENTIFIERS: NITROGEN OXIDES (U)

THE REPORT PRESENTS THE RESULTS OF THE SPACE FIRE HAZARD INVESTIGATION PROGRAM. THE PURPOSE OF THE PROGRAM WAS TO DETERMINE IF A HAZARDOUS CONDITION EXISTED UNDER VACUUM CONDITIONS WITH REGARD TO LEAKAGE OF ROCKET PROPELLANTS IN SPACE VEHICLE PROPULSION COMPARTMENT AREAS. TESTS WERE CONDUCTED UNDER VARIOUS POTENTIALLY HAZARDOUS CONDITIONS AT ALTITUDES FROM 25,000 TO 200,000 FEET. NO ATTEMPT WAS MADE TO DEFINE IGNITION CHARACTERISTICS OF THE COMBUSTIBLE COMBINATIONS INVESTIGATED. THE TEST SPECIMENS WERE N2O4, N2H4 AND 50% UNSYMMETRICAL DIMETHYLHYDRAZINE AND 50% HYDRAZINE (0.5 UDMH-0.5 N2H4). OTHER COMBUSTIBLES I.E., HYDRAULIC FLUID, LUBRICATING OIL AND GREASE WERE TESTED IN COMBINATIONS WITH A FUEL AND OXIDIZER. NON-METALLIC MATERIALS WERE ALSO TESTED IN COMBINATION WITH THE OXIDIZER AND FUELS. ANALYSIS OF THE DATA REVEALED THAT PROPELLANT LEAKAGE WITHIN CLOSED COMPARTMENT AREAS CAN RESULT IN FIRES AND EXPLOSIONS. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-602 742 DIV, 10/1 30/1
(TIST2/00)
SOUTHERN FOREST FIRE LAB,. MACON, GA,
AN EXPERIMENTAL STUDY OF MODEL FIRES, (U)
TECHNICAL REPT, NO, 3,
3
BYRAM,G, M, ;CLEMENTS,H, B, ;ELLIOTT,E,
R, ;GEORGE,P, M, ; HC $2.00
JUNE 64 50 P, MF $0.50
DCM SR59 10
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, FLAME PROPAGATION), MODELS (SIMULATIONS), FOREST FIRES, METEOROLOGICAL PARAMETERS, WIND, WIND TUNNELS, TESTS, TEST METHODS, FUELS, BURNING RATE, CONVECTION, GAS FLOW, IGNITION, WOOD, TEMPERATURE (U)
IDENTIFIERS: FIRE MODEL PROJECT (U)

THE FIRST PART OF THE REPORT PRESENTS THE RESULTS OF TESTS OF FIRES IN WOOD CRIBS, IN ONE SERIES OF TESTS CRIBS OF THE SAME HEIGHT AND STRUCTURE BUT WITH DIFFERENT AREAS, OR HORIZONTAL CROSS-SECTIONS, WERE BURNED IN STILL AIR TO DETERMINE THE EFFECT OF SIZE OF BURNING AREA ON THE RATE OF BURNING PER UNIT AREA, A SECOND GROUP OF TESTS IN STILL AIR CONCERNS THE EFFECT OF STICK SIZE AND SPACING ON RATE OF FIRE SPREAD, A THIRD SERIES OF TESTS WAS MADE WITH FIRES IN THE WIND TUNNEL TO DETERMINE THE EFFECT OF WIND SPEED ON RATE OF SPREAD, RATE OF HEAT OUTPUT, FLAME LENGTH, AND ANGLE OF FLAME TILT, ALTHOUGH A QUANTITATIVE MODEL OF FIRE PROPAGATION IS NOT PROPOSED, THE SECOND PART OF THE REPORT DEALS WITH MECHANISMS OF FIRE SPREAD,

(U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-604 023 DIV. 14/1
(TIST3/00)
SOUTHERN RESEARCH INST., BIRMINGHAM, ALA.
THE DEVELOPMENT AND EVALUATION OF HEATRESISTANT,
RAIN-EROSION-RESISTANT COATINGS. (M)
FINAL SUMMARY REPT. FOR 26 JUN 63-26
JUN 64,
F
PERKINS,R. B. ;
JULY 64 52 P.
-6890-1533-VI
N156 43450

HC $3.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*HEAT-RESISTANT MATERIALS, PAINTS), (*PLASTIC COATINGS, HALOCARBON PLASTICS), (*HALOCARBON PLASTICS, PLASTIC COATINGS), HEAT-RESISTANT PLASTICS, WEAR RESISTANCE, EROSION, RAINFALL, THERMAL PROPERTIES, TESTS, PAINT PRIMERS, PIGMENTS, SOLVENTS, ADDITIVES, SILICONE PLASTICS, POLYAMIDE PLASTICS, SYNTHESIS (CHEMISTRY) (U)
IDENTIFIERS: FILLERS, HEAT-RESISTANT PAINTS, VITON (U)

A COATING BASED ON VITON A, A FLUOROCARBON POLYMER, WAS DEVELOPED THAT PROVIDES GOOD RESISTANCE TO RAIN EROSION (ABRASION), AS DETERMINED BY THE JET ABRADER METHOD, AFTER EXPOSURE TO HIGH TEMPERATURES OR TO WEATHERING. THE ABRASION RESISTANCE OF VITON A COATING WAS DECREASED ONLY SLIGHTLY BY EXPOSURE AT 500F FOR 15 HOURS OR BY EXPOSURE FOR 300 HOURS IN AN ATLAS TWIN-ARC WEATHER-OMETER.

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010006

AD-609 283 DIV, 13/1 30/1
(TIST3/00)
SOUTHWEST RESEARCH INST SAN ANTONIO TEX
THE DEVELOPMENT OF MODELS FOR USE IN THE INVESTIGATION OF FIRE SPREAD, (M)
FINAL REPT, FOR 1 JUL 63-1 OCT 64,
F
EGGLESTON,LESTER A, ;AMBROSE,JOHN E,
;BRADSHAW,WILLIAMW, ;YUILL,CALVIN H,
;
NOV. 64 70 P, HC $3.00
SWRI-03-1212 MF $0.75
DA49 146XZ146 NWER12 024
DASA , 1561
UNCLASSIFIED REPORT

DESCRIPTORS: (*FIRES, BUILDINGS), (*BUILDINGS, FIRES), (*TEST MODELS, FLAMMABILITY), FIRE SAFETY, COMBUSTION, MODELS (SIMULATIONS), DESIGN, ROOFS, WOOD, FUELS, CONSTRUCTION, CONTROL SYSTEMS, WIND, TERRAIN, BURNING RATE (U)
IDENTIFIERS: FIRE SPREAD (U)

THE CONSIDERATIONS INVOLVED IN THE DEVELOPMENT OF MODELS OF BUILDINGS FOR USE IN THE STUDY OF MASS FIRES AND FIRE SPREAD ARE EXAMINED, IT IS DEMONSTRATED (1) THAT SCALING LAWS APPLY TO ACTUAL MODELS OF STRUCTURES AS WELL AS TO WOOD CRIBS AND (2) THAT THE EFFECT OF WALL AND ROOF OPENINGS, INTERIOR WALLS, FUEL THICKNESS AND WEIGHT ON BURNING RATES CAN BE ESTABLISHED, A 3/8-IN, BY 1-1/4IN, ELECTRONIC MODEL HAS BEEN DEVELOPED WITH CONTROL CIRCUITRY THAT CAN BE USED REPEATEDLY IN MULTIPLE UNITS TO DETERMINE THE EFFECT OF BUILDING CONSTRUCTION AND SIZE, SPACING BETWEEN BUILDINGS, TERRAIN, WIND AND BURNING INTENSITY ON FIRE SPREAD IN SPECIFIC SITUATIONS, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010009

AD-602 947 DIV. 22/1 20/1
(TIST7/31)
STANFORD RESEARCH INST., MENLO PARK, CALIF.
SURVEY OF THE THERMAL THREAT OF NUCLEAR WEAPONS.
(U)
ROGERS,JACK C. ;MILLER,T. ;
NOV. 63 431 P.
OCD OS62 135 IMU4021 3
UNCLASSIFIED REPORT

HC $7.31
MF $2.00

DESCRIPTORS: (*NUCLEAR WEAPONS, THERMAL RADIATION), (*THERMAL RADIATION, NUCLEAR WEAPONS), NUCLEAR EXPLOSION DAMAGE, METEOROLOGICAL PHENOMENA, TARGETS, VULNERABILITY, FIRES, FLAME PROPAGATION, DAMAGE, COUNTERMEASURES, SHELTERS, HEALTH PHYSICS (U)

THIS PAPER REVIEWS THE CURRENT STATE OF KNOWLEDGE ON THE THERMAL EFFECTS OF NUCLEAR WEAPONS, ATMOSPHERIC TRANSMISSIVITY, IGNITION OF TARGET ELEMENTS, AND FIRE PROPAGATION AND SPREAD. SOME OF THE TOPICS CONSIDERED ARE: IMPORTANCE OF ATTACK ASSUMPTIONS (DELIVERY CAPABILITIES OF THE ENEMY, WARHEAD TYPES AND YIELDS, ALTITUDE OF DETONATION, TIMING, AND WARNING) IN DETERMINING THE CHARACTERISTICS OF THERMAL RADIATION AND THE SUSCEPTIBILITY OF TARGETS TO THERMAL DAMAGE. MODIFICATION OF THE THERMAL RADIATION BY THE ATMOSPHERE, INTERVENING CLOUD LAYERS OR OTHER METEOROLOGICAL FEATURES, AND TARGET ELEMENTS, SUCH AS TREES AND TOPOGRAPHY. INTERACTION OF BLAST, RADIOACTIVITY, AND THERMAL RADIATION PHENOMENA. RESPONSE OF TARGET ELEMENTS TO DIRECT THERMAL RADIATION. EFFECTS OF WEATHER AND TOPOGRAPHY ON TARGET VULNERABILITY AND FIRE SPREAD. FIRE DEVELOPMENT AND SPREAD IN TARGET AREAS. VULNERABILITY OF HUMANS. COUNTERMEASURES. (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO,010009

AD-608 510 DIV, 14/1
(TIST4/00)
TRW ELECTROMECHANICAL DIV,, THOMPSON RAMO WOOLDRIDGE,
INC,, CLEVELAND, OHIO,
OXIDATION RESISTANT HIGH TEMPERATURE PROTECTIVE
COATINGS FOR TUNGSTEN, (M)
REPT, FOR 15 MAY 63-15 MAY 64,
NOLTING,H, J, ;JEFFERYS,R, A, ; HC $4.00
JULY 64 112 P, MF $1.00
AF33 657 11151 7312 731201
ML , TDR64 227
UNCLASSIFIED REPORT

DESCRIPTORS: (*TUNGSTEN, REFRACTORY COATINGS), (*REFRACTORY COATINGS, TUNGSTEN), (*SILICON COATINGS, TUNGSTEN), SHEETS, LOW-PRESSURE RESEARCH, COATINGS, SILICON ALLOYS, TUNGSTEN ALLOYS, TITANIUM ALLOYS, ZIRCONIUM ALLOYS, HAFNIUM, SPRAYS, OXIDATION, ANTIOXIDANTS, EROSION, TENSILE PROPERTIES, STRESSES, CASTINGS, BORON COMPOUNDS, NITRIDES, HIGHTEMPERATURE RESEARCH, HEAT-RESISTANT MATERIALS (U)

A CONTROLLED PROCESS HAS BEEN ESTABILISHED FOR APPLICATION OF (SILICON-TUNGSTEN) AND TITANIUM + ZIRCONIUM + (SILICON-TUNGSTEN) COATINGS TO TUNGSTEN SHEET, PROTECTIVE CAPABILITIES OF THESE COATINGS ON ARC CAST AND POWDER PRODUCT TUNGSTEN SHEET HAVE BEEN DETERMINED AT ONE ATMOSPHERE (AIR) FROM 1600 TO 3600F UNDER CYCLIC CONDITIONS, EXPOSURE AT STATIC PRESSURES BELOW 15 MM HG (AIR) AT 3400-3500F RESULTED IN VARYING DEGREES OF DETERIORATION OF THE (SILICON-TUNGSTEN) AND TITANIUM + ZIRCONIUM + (SILICON-TUNGSTEN) COATINGS, UNDER DYNAMIC LOW PRESSURE CONDITIONS (2000-2800 FT/SEC SIMULATED AIR FLOW) AT 16-20 MM HG BOTH COATINGS WERE PROTECTIVE TO TUNGSTEN AND RESISTED EROSION IN THE TEMPERATURE RANGE OF 2900-3400F (180 TO 325 BTU/SQ FT/SEC HEAT FLUX RANGE), VARIOUS REFRACTORY COMPOUND MIXTURES PLASMA SPRAYED ON TUNGSTEN SHEET WERE NOT PROTECTIVE AT ELEVATED TEMPERATURES IN AIR, A SILICON-TUNGSTEN + TITANIUM NITRIDE-BORON NITRIDE COATING COMBINATION PROTECTED TUNGSTEN FOR SHORT PERIODS OF TIME AT 3700F, TENSILE PROPERTIES WERE DETERMINED FOR SILICONTUNGSTEN AND TITANIUM + ZIRCONIUM + (SILICON-TUNGSTEN) COATED ARC CAST TUNGSTEN SHEET AT VARIOUS TEMPERATURES TO 3300F, IN STRESS OXIDATION TESTS THE SAME SYSTEMS LOADED AT 20 PERCENT OF THE YIELD STRENGTH SHOWED ESSENTIALLY NO CREEP AFTER 1 HOUR AT 3350F IN AIR, THE COATINGS WERE COMPLETELY PROTECTIVE AT THIS STRESS LEVEL, (AUTHOR) (U)

DEFENSE DOCUMENTATION CENTER

DEMAND BIBLIOGRAPHY DDC SEARCH CONTROL NO.010005

AD-610 641 DIV. 20/1 9/1 22/1 25/1
(TIST3/00)
TECHNICAL MILITARY PLANNING OPERATION, GENERAL ELECTRIC CO., SANTA BARBARA, CALIF.
A THEORY OF COMPRESSIBLE VISCOUS FLOW WITH APPLICATIONS TO LATE-TIME FIREBALL MIXING, (M)

MCKEE,J. W. ;DOLPH,C. L. ;
JAN. 65 72 P.
RM-65TMP-4
AF19 628 4210 5631 ,ARPA ORDER 491 563109
AFCRL , 65 48

HC $3.00
MF $0.75

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR EXPLOSIONS, EXPLOSION EFFECTS), (*EXPLOSION EFFECTS, GAS FLOW), COMPRESSIBLE FLOW, TURBULENCE, ATMOSPHERE, FIRES, THERMODYNAMICS, VORTICES, VELOCITY, PARTIAL DIFFERENTIAL EQUATIONS, FOURIER ANALYSIS, LINEAR SYSTEMS, DISTRIBUTION, GRAVITY, ELECTROMAGNETIC WAVES, PROPAGATION
(U)

THE REPORT DISCUSSES THE MOTION OF GASES AND WEAPON-DEBRIS AND THE TEMPERATURE DISTRIBUTION IN THE IMMEDIATE VICINITY OF THE RISING LATE-TIME FIREBALL OF A NUCLEAR DETONATION IN THE ATMOSPHERE. 'LATE-TIME' LOOSELY DENOTES THAT PERIOD AFTER THE FIREBALL HAS ADJUSTED TO THE PRESSURE OF THE AMBIENT ATMOSPHERE. A TECHNIQUE IS DESCRIBED FOR THE SOLUTION OF A CLASS OF PROBLEMS IN COMPRESSIBLE TURBULENT FLOW, AND IT IS APPLIED TO A PROBLEM INVOLVING THE RISE AND THE ENTRAINMENT OF AMBIENT AIR BY THE LATE-TIME FIREBALL. (U)

AD-608 983 DIV. 30/1
(TIST1/00)
WARNER AND SWASEY CO FLUSHING N Y
INFRARED TECHNIQUES FOR AIR TEMPERATURE MEASUREMENTS
IN A HYPERSONIC WIND TUNNEL, (M)
FINAL TECHNICAL REPT.,
F
PENZIAS,GUNTER J. ;TOURIN,RICHARD H.
;DOLIN,STANLEY A, ;
OCT, 64 24 P,
AF33 616 8319 7065 7065 02
ARL , 64 170

HC $1.00
MF $0.50

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION PYROMETERS, INFRARED RESEARCH), (*INFRARED SPECTROSCOPY, RADIOMETERS), (*PYROMETERS, HYPERSONIC WIND TUNNELS), (*HYPERSONIC WIND TUNNELS, INFRARED RESEARCH), HIGH-TEMPERATURE RESEARCH, AIR, FLAMES, MONOCHROMATIC LIGHT, WIND TUNNELS- (U)

INFRARED SPECTRORADIOMETRIC TECHNIQUES WERE DEVELOPED FOR MEASUREMENT OF HIGH GAS TEMPERATURES WITH MICROSECOND TIME RESOLUTION, PROCEDURES FOR USING A HIGH SPEED MONOCHROMATIC RADIATION PYROMETER WERE ESTABLISHED, AND TEMPERATURES IN GASEOUS DETONATIONS WERE MEASURED TO DETERMINE INSTRUMENT PERFORMANCE, BREADBOARD MODIFICATIONS WERE MADE TO THE HIGH SPEED PYROMETER TO ENABLE ITS USE FOR MEASURING AIR TEMPERATURES IN THE MACH 20 HYPERSONIC WIND TUNNEL AT THE AERONAUTICAL RESEARCH LABORATORIES, WRIGHT-PATTERSON AIR FORCE BASE, OHIO, THE TEMPERATURE MEASURING TECHNIQUE WAS DEMONSTRATED AT ARL BY MEASURING THE TEMPERATURE OF A PROPANE-AIR FLAME AT ATMOSPHERIC PRESSURE WITH THE HIGH SPEED INFRARED PYROMETER INSTALLED ON THE WIND TUNNEL, THE FLAME WAS LOCATED IN THE TEST CABIN AND THE MEASURED TEMPERATURE WAS 2050K, APPLICATIONS OF THE PYROMETER TO TEMPERATURE MEASUREMENT IN THE SETTLING CHAMBER AND IN THE TEST CABIN DIRECTLY IN FRONT OF THE MODEL IN THE MACH 20 WIND TUNNEL WERE CONSIDERED, (AUTHOR) (U)

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